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The Antiseptic

A Monthly Journal of Medicine & Surgery

Founded by the late Dr. U. RAMA RAU in 1904. Published on the 15th of every month

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The artist has here depicted a Syrian coffee mortar and pestle. Both are beautifully decorated by wood carving inlaid with light colored pigment. The instrument attached to the bowl by a chain is a brass spoon for removing coffee from the walls of the mortar. The mortar was made by Kevzata in 1327, and presently rests in the Museum of the Philadelphia College of Pharmacy.

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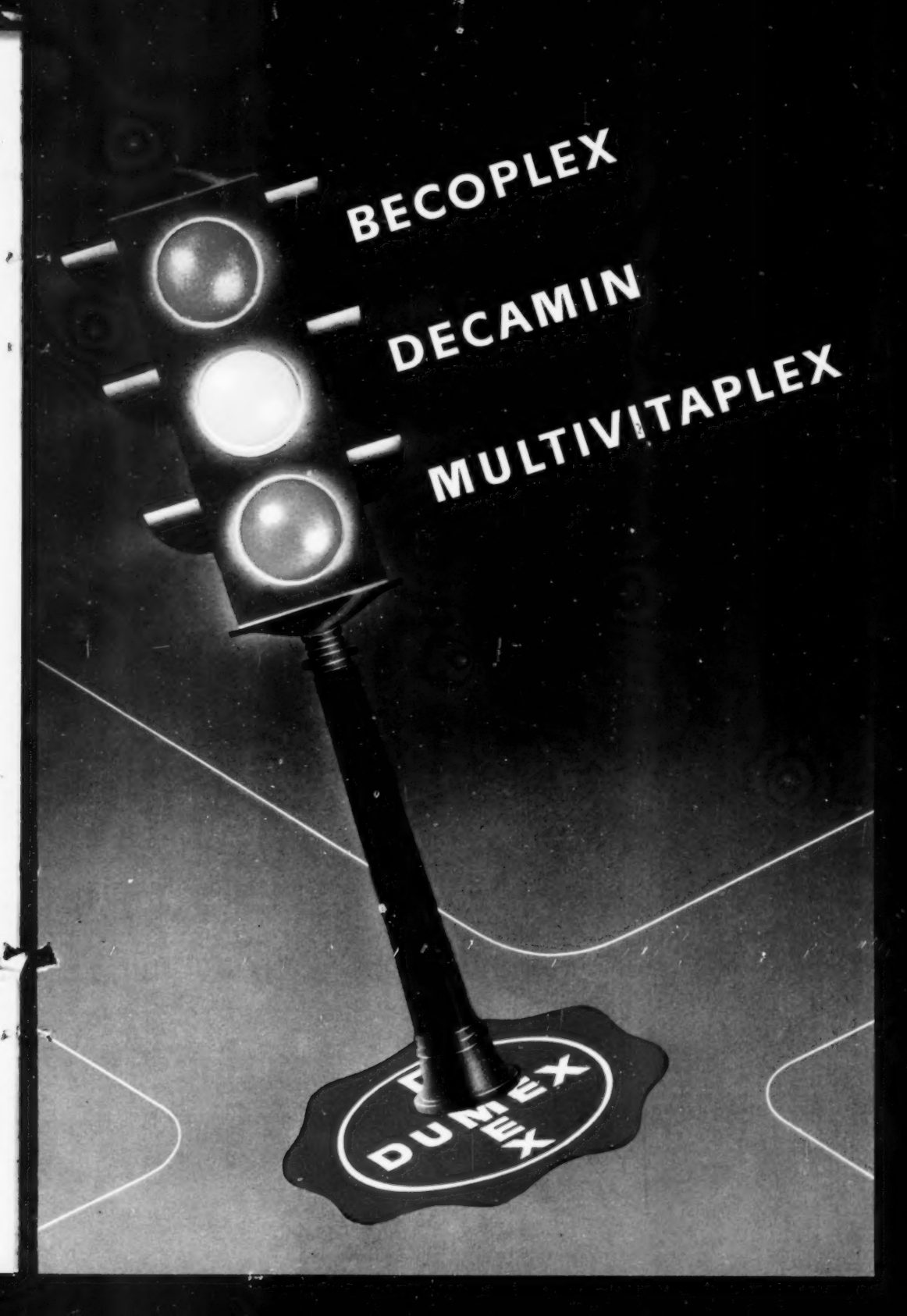
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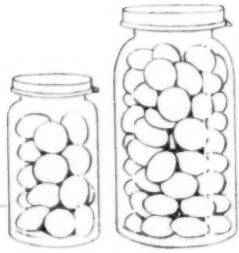

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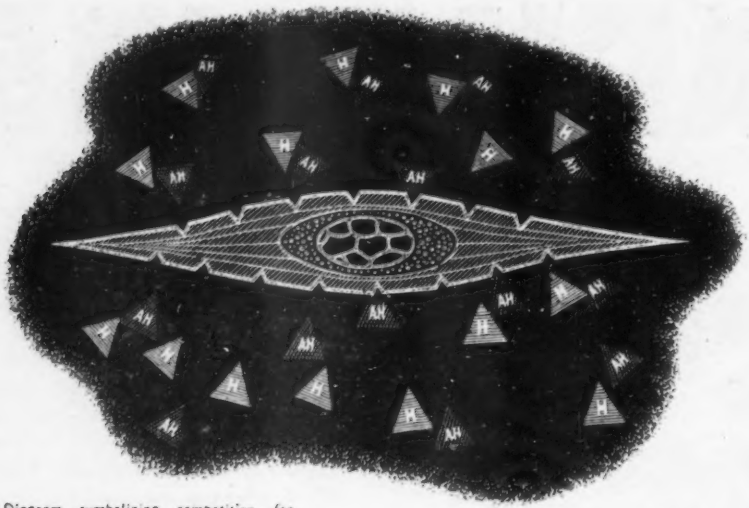

Diagram symbolizing competition for "shock-tissue" receptor sites by histamine (H) and an antihistaminic (AH).

Modus operandi . . .

The clinical use of antihistaminics such as mepyramine maleate and promethazine hydrochloride for the symptomatic relief of allergic and anaphylactic conditions is based on the theory of histamine-release.

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The antihistaminics are not believed to prevent the antigen-antibody reaction in the "shock-tissue", nor to destroy the histamine thereby released, but it is thought that in some unknown manner, perhaps by competing for and occupying or blocking the receptor-sites in the "shock-tissues", they prevent tissue damage by histamine.

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Original Articles

ORGANISED HOME TREATMENT IN THE FIGHT AGAINST TUBERCULOSIS*

B. K. SIKAND, M.B., B.S., D.P.H. (London).

Director, New Delhi Tuberculosis Centre, New Delhi.

AN "Organised Home Treatment" scheme for the treatment and prevention of tuberculosis has been operating in Delhi for some years. This organisation has been formed in the hope that a large number of patients may get treatment in their homes and prevent overcrowding in the few T.B. beds available in the hospitals.

Tuberculosis is one of India's major health problems. It is estimated that nearly 5 lakhs die from tuberculosis every year and that some 25 lakhs people suffer from active T.B. disease and spread the disease to others in our country. It attacks people of all ages of both sexes. Though it attacks the poor more than the rich, social position is no protection against this disease. The majority of the victims are in the prime of their lives, when they are most needed by their own families and by the nation.

Tuberculosis is a preventable disease and can be easily prevented provided a clean and hygienic mode of living is adopted. Tuberculosis is the punishment for the disregard of the laws of health, and natural ways of living. A large majority of the population have all the means, but lack the knowledge and the will to use the facts. In relation to the under-privileged however, large scale social policies to provide more food and better housing

* Specially contributed to THE ANTISEPTIC.

and education have to operate before we can totally banish the enemy. Tuberculosis cannot be completely prevented by mere medical measures. Apart from the general protection which a clean hygienic way of life gives against T.B., we have fortunately in BCG vaccination a more direct and more specific method of preventing tuberculosis. BCG vaccination is a safe harmless and tried method of protection. It has proved successful in the Scandinavian countries. It is especially useful for children. Every one can help to win the fight against tuberculosis by getting all children BCG vaccinated, and helping those in his neighbourhood, his ward and in the city, to do likewise. Free vaccination is available at all BCG centres. There is no reason why any child should miss the advantage of having protection against this deadly disease by BCG vaccination. It is estimated that BCG vaccination if universally carried out throughout the country will reduce the death-rate from this disease by over 50% during the next five to ten years.

Tuberculosis is a curable disease.—Modern discoveries have made the treatment of this disease comparatively easy and more sure of results. Treatment of the sick is a social and moral duty. It is also essential for the prevention of the disease. Treatment of the sick is atleast half of the prevention though not the whole prevention. Providing treatment to the sufferers is indirectly the protection of the whole population. Successful treatment depends on :—(1) Early diagnosis ; (2) isolation and treatment of the sick ; and (3) socio-economic help to the patient and his family to complete the treatment and provide rehabilitation through Care and After-care committees. These activities need universal and joint action from the whole population.

1. *Early diagnosis* :—Early diagnosis and treatment mean less suffering, less expense, a successful cure which avoids crippling disabilities, and reduces the chances of a relapse. The only way to diagnose early pulmonary T.B. is by X-ray examination of the chest. Those who cannot afford an X-ray can go to the nearest tuberculosis clinic for a free check-up. One should never be afraid of suspecting T.B. It is better to be told that one is not suffering from T.B. than to carry the unnecessary burden of fear and of danger from the disease when it may not actually be there. If this advice is generally followed, nearly 90% of the cases will be discovered early, and the advantage of such a discovery to the individual and to the community will indeed be enormous.

2. Under ideal conditions we would aim to send all the patients to the hospital, both for isolation and treatment. It is estimated that to meet the demands of pulmonary T.B. patients from a city like Delhi, it would need anything from 10,000 to 15,000 beds, while the present bed strength for T.B. patients in Delhi is about 250. Similar or perhaps worse conditions prevail in other cities in India. Under the present conditions therefore, only one out

of every 500 to 700 patients in Delhi seeking admission can hope to get a bed. A long waiting list with a period of waiting from 6 to 9 months is the rule. There is no doubt that TB beds must be increased. The Government probably has plans to increase the bed strength, but it is not possible for any Government to provide such a large number of beds all at once. There is therefore, an enormous scope for private philanthropy and charity to supplement the official efforts. Till such time, as all the beds are ready, a large majority of the patients will have to be treated in their homes, and the admission policy in regard to the existing beds should be so regulated that only such patients are admitted, as cannot be treated in their homes from the medical point of view or when housing and socio-economic conditions make isolation and treatment impossible in their homes.

If the patients are to be treated in their homes, a legitimate question to ask is, whether it is possible to give the modern scientific treatment and carry out the preventive measures to stop the spread of the disease to the others in the family and to the neighbourhood. The answer is 'Yes', *provided* a separate room is available for the patient in the home. Separate bedding, separate utensils, and separate toilet facilities are all that will be needed, and there can be found even in modest homes. Frequent visits and advice from the doctors and public health nurses are essential to guide the patient and teach the family in prevention and treatment. If the patient takes the rest as advised, and follows the simple rules regarding disposal of sputum conscientiously and continuously it is possible to treat and teach a majority of the patients successfully in their homes without any danger to others. *A careful consumptive is not a danger to live with.* Doctors and public health nurses can help to teach and make a TB patient a careful individual, provided the patient and his family give their fullest co-operation. No doubt certain kinds of treatment can only be had during a long stay in the hospital, and for such treatment some patients must be sent to the hospitals but otherwise a large part of the treatment can be carried out in the home with occasional visits for treatment to the nearest TB clinics.

The Delhi plan of organised home treatment.—Realising the difficulty arising from the shortage of hospital beds in a large city like Delhi, the authorities have divided Old and New Delhi into 3 regions and have attached one region to each of the three clinics in the City *i.e.*, New Delhi and Wards 4, 5, 8, 9, 10 and 11 of Old Delhi to the New Delhi TB Centre; Wards 1, 2, 3, 6, 7, 12 and 13 to the Queens Road Clinic and Wards 14, 15 and 16 to the Ramakrishna Clinic. The scheme is called Organised Home Treatment. Each clinic has been given the responsibility of public health control in its own area. Each clinic organises the scientific search for early cases, attempts to provide scientific treatment and

preventive measures in the patient's homes as best as can be done, with the combined resources of the Clinic and of the family. Organised effort for economic relief to the poor families from charitable sources through Care and After-care committees is an essential activity of this scheme. Each clinic employs a staff of doctors and public health nurses for frequent visits to the patients in their houses, besides giving free treatment and advice at the respective centres to all the poor patients living in the area allotted to the Clinic. The Government gives a grant to each clinic for this activity and the work of the three clinics is co-ordinated by a Technical Sub-Committee. Hundreds of patients get help from the scheme. More clinics, more beds, and larger help are certainly needed, but under the existing circumstances this scheme is the best and the only possible approach to a difficult problem. It is gratifying to note that with the help of such a scheme in the New Delhi TB Centre, nearly 40% of the 800 known lung TB patients registered from the area at their clinic, are doing full or part-time work and only attend the clinic occasionally for treatment and advice. Modern discoveries of the new wonder drugs and the collapse of the lungs by various surgical procedures, have yielded good results. After an initial period of a few months' rest, it is quite possible to do light work while continuing treatment, but to be successful the treatment should be continued for a longer period.

Poor housing conditions often make isolation impossible in the homes. Again in one of the areas under our control, we find that in 307 or 40% of the 800 known lung TB patients in the area, isolation was impossible as the houses occupied by these patients were single room tenements. If the responsibility for such a dangerous situation was to be shared equally by all the 6 lakhs of inhabitants of the above area, it would mean providing one two-roomed tenement in their own streets or Mohallas by every 2000 inhabitants. This is no over-simplification of a difficult problem. Provision of commuity houses for public health reasons is a recognised useful activity in the Western countries. The price of health is both individual and community effort. If some individuals or organisations can appreciate the right idea, they may move the whole City and secure large-scale help to solve the local TB problem, till enough beds are available in the TB hospitals.

3. *Care and After-care Committees*:—As stated earlier, tuberculosis is a social disease. A high social status is no guarantee of protection, as even millionaires suffer from tuberculosis, but the disease attacks the poor more frequently. A large number of persons cannot afford treatment and need help to complete the treatment; therefore, economic relief to poor T.B. patients is an essential item in any scheme of anti-tuberculosis work. In social work of this nature, the tuberculous family is the unit. Helping the patient and supervising the dependents are only two phases of

the same problem and both aim at the return of the sick person to his normal place in life as a healthy and useful citizen. In India where Government help is not yet available to any appreciable extent, voluntary work forms the only basis of approach and paves the way for future development. There is indeed scope for every citizen to help the poor T.B. patients.

To be successful, the Care-committee must have sufficient financial support which may be raised as membership-fee, from donations or other fund-raising procedures or by co-ordinating and canalising philanthropy and charitable agencies into this cause. These committees must however, function as an integral part of an existing T.B. clinic. The doctor recommends help for the patient and the family from the medical point of view, and the Committee after necessary social investigations decides on whom to give the help. The help may take the form of hiring a separate room or, a new bed and bedding for isolation. Expensive medicines not usually supplied free from the hospital are often needed for the patients. Extra nourishment and payment of transport charges to and from the Hospital are common charges on the fund. Help to the family when the bread-winner is sick or helping to board out children in the house of a healthy relation, if the mother is sick and or if isolation of the patient in the home is impossible, are again useful activities. The Committee members by advice and periodical visits to the patients can keep up the morale of the patient and help to bring about the necessary co-operation between the patient and the Clinic.

These social services are useful while the patients are suffering from the disease. There is however, another but no less important function of the Care-committee, and this is the care of those who have been under treatment and have been considered fit and safe by the doctors, to return to a more or less normal life. This function is called After-care. This Committee must help the TB patient during the first few dangerous years after their illness to avoid set-backs. Finding a suitable job or enlisting the help and sympathy of the employer to get part time or lighter work are also contributions to social service. For some patients the Committee may be able to start a new way of making a living independently and if necessary provide training for new occupations such as cottage industries, petty trades or even small workshops. These are some of the ways in which a Care-committee can help in the fight against tuberculosis. There is vast scope for every single citizen to do his bit in this humanitarian effort. This is not only humane but the best effort a healthy person can make to protect oneself from tuberculosis, because *nobody is safe until all are safe.*

The scheme of Organised Home Treatment which has been working with a good measure of success in Delhi, is well worth introducing in at least all the larger cities and towns in India, so that by a concerted large scale all-out effort over the whole

country, it may be possible to co-ordinate the work of all the agencies engaged in the control, prevention, and treatment of this scourge. It would thus be possible to achieve a fair measure of success and secure the first victory in this grim fight at a much earlier date and with greater certainty, than when isolated efforts are made by various independent organizations without co-ordination.

Anti-histaminics in Ophidiasis (Snake-bite)

Death from snake-bite is a menace in India and other countries. About 25,000 deaths from snake-bite take place in India—and this is a modest estimate. Bites from Cobra and Russell's viper alone account for the largest number of these deaths. From the extensive researches made by Chopra and Chowhan and others, it is apparent that liberation of a histamine-like substance during snake-poisoning is one of the factors responsible for its toxic action. On the basis of this conclusion, anti-histaminics may be expected to produce at least some beneficial effect in snake-bites, by counteracting the action of the toxic histamine-like substance. Investigations were undertaken by Pradhan, at the Central Drug Research Institute at Lucknow and animal experiments were carried out using both Cobra venom and Russell's viper venom by intravenous injections in sub-lethal doses. Using cobra-venom, 0·15 mg. to 0·35 per kg. the B.P. was initially raised but was followed by a fall; with increased doses the fall was more marked and permanent. On the other hand viper venom 0·025 mg. to 0·05 mg. per kg. produced a slight rise of B.P. followed by gradual fall and returning to normal quickly; but in doses of 0·1 mg. to 0·25 mg. per kg. it caused rapid and marked fall in B.P. which was permanent. (*Chopra and Chowhan; Chopra and Iswariah 1931*).

In the present series of experiments contrary results were noted with both venoms administered after an initial dose of phenergan—a potent anti-histamine drug. The phenergan therefore, counteracted the depressant action of the histamine-like substance liberated by the venom, Roy *et al* (1952) showed that while cobra venom causes a depression of the B.P., and respiration, an Ayurvedic preparation containing cobra-venom causes a definite rise of B.P. The depressant lethal poison can be converted into a stimulant life-saving substance by phenergan or by the Ayurvedic preparation referred to by Roy *et al* working at the Department of Pharmacology at the Calcutta School of Tropical Medicine.

The action of phenergan can be utilised in states of shock and collapse produced by snake venom. Adrenaline or pituitrin is being used now to combat shock; phenergan having shown its more specific action against venom-shock is worth trying in suitable cases. As this drug itself is liable to cause a fall of B.P. and depress respiration (as observed in the experimental animals) this effect can be counteracted by diluting the drug very much with saline, glucose etc. and then injecting it very slowly and cautiously. Anthisan (mepyramine) fails to produce the same result; while phenergan (promethazine) is able to antagonize the depressant action of both Cobra and Russell's viper venoms on the B.P. and respiration.—(Pradhan, S. N., *Ind. Jour. Med. Res.*, 40, 1, pp. 63–66, 1952).

USE OF GOLD PREPARATIONS IN RHEUMATOID ARTHRITIS*

V. M. KAIKINI, B.A., F.R.C.S. (Edin.),
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THE term rheumatism is so indiscriminately used for cases of arthritis that it is very often difficult to know the specific variety to which the disease belongs. Thus, all varieties of arthritis acute or chronic due to rheumatic fever, syphilis, gonorrhœa, hæmophilia, sepsis and osteo-arthritis or rheumatoid arthritis are classified under the term 'rheumatism'. To be precise and accurate the term 'rheumatism' should be applied only to rheumatic fever which is an acute polyarticular disease in which usually the larger joints get involved one at a time, the others following in succession. Recurrence after subsidence of the trouble is common, accompanied by pathological changes in the heart.

The most common non-specific varieties of arthritis are osteo-arthritis and rheumatoid arthritis. Osteo-arthritis is a chronic mono-articular disease and occurs most commonly in elderly people the larger joints, especially the hip joint or shoulder joint being involved. It gives rise to pain at the beginning, followed by rigidity in later stages. Swelling is late in appearing. It is an intra-articular disease involving the cartilages and bones of the joint which hypertrophy and cause lacking of the joint, with restriction of movements. Much more common is rheumatoid arthritis. Osteo-arthritis is definitely a disease of degeneration of the body tissues due to old age. But rheumatoid arthritis occurs most commonly in young adults and even in small children; it is an acute and mostly a poly-articular disease. Sometimes it is mono-articular also. Most likely it is a disease due to some disturbance in metabolism as no special etiological factor can be detected. Nowadays, more cases of this disease are found than it used to be some years ago. It is probably due to the lack of the elements of nutrition in the food that we have been getting now, especially the absence of the necessary amount of milk, milk-products etc., in our diet.

In the typical variety in young adults, it occurs as an acute polyarticular type, with pain and swelling, beginning first in the smaller joints, usually of the fingers. After some time the bigger joints are affected. Fever may be present in some cases at the beginning; in the majority of cases it is however, absent. But pain and swelling are well marked. This variety runs a persistent and prolonged course and may ultimately cripple the patient.

Lately the majority of cases that come under observation have been of the monoarticular type, the trouble occurring in the larger

* Specially contributed to THE ANTISEPTIC.

joints especially of the lower extremity, the knee joint being the most affected, other joints becoming affected later on. The disease runs a comparatively mild course in the majority of cases although pain and rigidity are present, causing a great deal of inconvenience to the patient. Constitutional symptoms like fever and debility which are common in the other variety are usually absent. On the whole this variety runs a mild course although recurrence is common. But permanent disability is rare. In young children the acute polyarticular variety of rheumatoid arthritis occurs in a more serious form, the smaller joints being involved first, the bigger joints following later. Constitutional symptoms like fever, debility are a marked feature. This variety is called Still's disease and is luckily comparatively rare. In the milder type in adults described above, the usual remedies like salicylates very often give relief but in the majority of cases other remedies have to be tried. Hydrotherapy has been found very useful in many cases especially sea-bathing. This should be supplemented by massage and internal remedies. Irgopyrine injections have been found to give relief in some cases. But very good results have been obtained with remedies containing gold products like myocrisin. Recently I tried *Rheumophan tablets* of Alarsin Co., containing Gold Bhasma and Guggul which gave exceedingly good results in many cases of rheumatoid arthritis of the above variety. This was tried in about twentyfive cases, the majority of them being early ones. In the mono-articular type the results were rapid, the swelling and pain disappeared within a week and the recurrence, if it occurred, was very mild. One was a typical case of rheumatoid arthritis in a woman aged about 23 years. The trouble was of the recurring type. Very good results were obtained by the use of these tablets. Both gold and guggul have been used for centuries in Ayurvedic medicine for the treatment of arthritis. The tablets were only once in a tried very chronic and persistent case. The patient had arthritic trouble-polyarticular-of many years' duration with all the constitutional symptoms of rheumatoid arthritis. The tablets were tried for about two months but only very slight improvement was noticed. Being a very chronic case of long duration a prolonged course of treatment was necessary in this case.

I obtained very good results by the intravenous injection of ½ c.c. of diluted antityphoid vaccine in a fairly advanced case of rheumatoid arthritis. But the reaction after the injection was very severe with high temperature and other constitutional symptoms. Myocrisin also gives rise to some reaction, though mild when given in graduated doses. But gold and guggul given by mouth produce no after-effects at all and the results are good. Being a restorative, gold improves general health and acts as a tonic also.

Before starting treatment the underlying cause of the arthritis should be correctly ascertained, eliminating rheumatic fever,

syphilis and gonorrhœa etc., which are also other likely factors. This gold therapy has not so far been tried in cases other than rheumatoid arthritis. In view of the therapeutic value of its constituents, rheumophan deserves to be given a trial in such other cases also.

Spermine and Tubercle Bacilli

Hirsch and Dubos of the Rockefeller Institute for medical research who are studying the nature and properties of various extracts from animal tissues, which limit the multiplication of tubercle bacilli *in vitro* and *in vivo*, have reported on a crystalline substance, isolated from extracts of tissue in acidified dilute ethanol. By chemical purification and analysis, this inhibitory material was identified as spermine, an organic base widely distributed in animal tissues. [Spermine has been used in the treatment of nervous disorders, in the form of spermine phosphate. ED., ANTISEPTIC]. The extract was found by Hirsch and Dubos to be equally active against virulent, attenuated, and avirulent variants of human and bovine tubercle bacilli; but had little or no effect on saprophytic mycobacteria and on several non-acid-fast organisms. Its inhibitory effect on the tubercle bacilli was essentially independent of the size of the inoculum within the limits studied. Tubercle bacilli maintained in the presence of this agent for 4 days, failed to grow when transferred to inhibitor-free-media. [These valuable observations are only of a preliminary nature, and are suggestive of possible therapeutic application when confirmed, and made available to the profession.—ED. ANTISEPTIC]. —*Jour. Exp.Med.*, 95, 2, pp. 191–208, 1952).

The Rapid Diagnosis of Influenza

The clinician and the epidemiologist, who have been spoiled by the speed of modern bacteriological diagnosis are still not reconciled to the unhurried laboratory diagnosis of virus diseases. They should be heartened by a report (Hummeler, K., Kravis, L P., Sigel, M.M., *J. Bact.*, 1952, 64, 253) describing how to determine within 3 days the type of virus responsible for a case of influenza. Throat washings from the suspected case are inoculated amniotically into fertile hen's eggs from which the amniotic fluids and membranes are harvested two to three days later. They are at once used as antigens in a complement-fixation test to determine the serological type of the influenza virus. Refined techniques can then be applied at leisure if the epidemiologist requires more precise information about the serological subtype.

Much more rapid, although less complete, information is yielded by a test designed by Fazekas de. St. Groth. (*Nature*, London, 1951, 167, 43) and based on experimental studies on influenza in mice (*Nature*, Lond., 1950, i, 1101). The respiratory mucus of normal mice contains an inhibitor of influenza-virus-agglutination which disappears during influenza infection, probably as a result of enzymic action of the virus. Human nasal secretions also contain an inhibitor of influenza virus-agglutination, but its concentration varies greatly between normal people. Fazekas found, however, that the inhibitory titres of nasal secretions for three different strains of influenza virus showed a characteristic pattern which was significantly altered by influenza infection. It is claimed that the test will *give an answer within an hour*, although it tells only whether infection with influenza-virus is present or not. This test deserves further study. —(*Lancet Annot.*, Oct. 25, '52).

PLEURAL EFFUSIONS*

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PLEURAL effusions are largely tuberculous in origin. It is estimated that about 80% of all the effusions that are seen in general practice are tuberculous, as will be evident from the following observations :—

(*a*) Tuberculous lesions are often present in the lungs or elsewhere.

(*b*) After aspirating the fluid, a pulmonary focus, sometimes quite small may be noticed.

(*c*) Subsequent history shows that a large number of cases develop pulmonary tuberculosis in 5 to 10 years.

(*d*) *Post-mortem* evidence—Tuberculous lesions are often found in cases of accidental deaths of patients who were suffering from pleural effusion.

(*e*) The exudate cytologically resembles tuberculous fluid with a preponderance of small lymphocytes.

(*f*) Tubercle bacilli may be found occasionally in the fluid when it is coagulated and the coagulum digested and centrifugalised.

(*g*) Guineapig inoculations may be positive.

(*h*) With improved methods of culturing pleural fluid, the number of positive cases has increased from 40 to 70%.

(*i*) Results of tuberculin reactions.

(*j*) Response to streptomycin therapy.

The so-called idiopathic effusions are thus really tuberculous in origin. The development of pleural effusion in an young adult should always be looked upon as a manifestation of tuberculosis, unless it can be definitely proved to be due to some other infection.

Conditions that give rise to tuberculosis effusion are.—1. *Primary complex* :—It may follow late primary infection. It is most frequently an event in the post-primary stage of pulmonary tuberculosis while the activity of the primary complex is still present. A majority of cases of effusion occur within six months to one year of late primary infection when the underlying lung is apparently normal to radiological examination. Most of the idiopathic effusions come under this group.

2. *Haematological spread* :—It may be a manifestation of generalised tuberculosis in which the pleura also gets affected.

3. *Perifocal reaction* :—It may be the result of a perifocal reaction of the pleura to an intrapulmonary spread.

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* Specially contributed to THE ANTISEPTIC.

4. *Spread of the disease*:—It may be the result of a tuberculous involvement of the pleura, secondary to the tuberculous disease of the underlying lung tissue.

5. *Contact infection*:—It may be due to contact infection of the pleura from a cold abscess of the spine or from caseous lymph nodes in the chest.

While the majority of cases of pleural effusion are tuberculous in origin, we occasionally come across cases which are definitely nontuberculous in origin, the percentage of such cases being however small, not more than 20%.

Non-tuberculous effusions are caused:—(*a*) By the extension of a disease process in the lung. The commonest cause is pneumonia. Effusion secondary to pneumonia is the commonest and is very often found in children. The common organisms responsible are the pneumococcus and the streptococcus and occasionally Friedlander's bacillus. Occasionally pulmonary infarct and lung abscess may extend to the pleura and cause effusion. (*b*) By extension of inflammation from adjacent organs as in pericarditis, medastinitis or subphrenic abscess. (*c*) By generalised infections such as septicæmia, acute rheumatism and enteric fever. (*d*) Following injury to the chest wall. (*e*) By the accumulation of a mechanical transudate associated with such conditions as Bright's disease, lymphadenoma and malignant growths.

The onset of the disease may be either acute or insidious. The formation of fluid may be rapid or slow, massive or small. If the onset is acute, it starts with severe local and constitutional symptoms. There will be severe pain on the side of the chest. The pain is severe on coughing. As the inflamed surfaces become separated by fluid, the pain decreases. With the appearance of effusion there may be dyspnœa. If the formation of fluid is rapid dyspnœa is more pronounced, but if it is slow dyspnœa is not marked though the effusion is massive. There is a rise of temperature ranging between 100°F and 103°F which usually continues for many weeks. In many cases, however, the onset is insidious with little discomfort and only slight loss of well-being. Such individuals not infrequently carry fluid in their chests for many months, before seeking medical advice. Sometimes they do not even seek medical advice as the fluid gets completely absorbed leading to a complete recovery for the time-being.

The physical signs of effusion:—The important definite signs are:—(*a*) Displacement of the heart to the opposite side; (*b*) markedly diminished vocal fremitus; (*c*) an absolutely dull note over the area corresponding to the fluid, with a greatly increased sense of resistance to the percussing finger; (*d*) diminished or absent breath sounds; (*e*) markedly diminished vocal resonance; and (*f*) ægophony just above the fluid level. It is one of the most characteristic auscultatory signs of pleural effusion.

The X-ray appearance of a pleural effusion is fairly characteristic. The fluid forms a dense shadow at the base obliterating the outline of the diaphragm and obscuring the costophrenic angle. The upper limit of the effusion is nearly always curved with concavity upwards and is higher on the lateral side than on the medial side. The mediastinum is displaced to the opposite side. The picture does not usually reveal the condition of the lung which is under collapse.

The exploration of the pleural cavity has the advantage of establishing the presence and the type of effusion. A complete diagnosis cannot be made without a thorough cytological and bacteriological examination of the fluid.

Tuberculous effusions are usually clear and straw coloured with a preponderance of lymphocytes. Red cells, few to moderate in number may be present with occasional polymorphs. Tubercle bacilli seldom appear in smears but may be demonstrated by culture or by guineapig inoculation. Sometimes the fluid may be sterile but it should not be accepted as a proof that the pleurisy is non-tuberculous, unless clearly proved by other tests.

The presence of a large number of polymorphs is usually an indication of some other infection. The non-tuberculous infective effusions are usually seropurulent or purulent due to the presence of large numbers of polymorphs. The organisms concerned may be found in smears from centrifugalised deposits.

In transudates the fluid is of a low specific gravity and contains less coagulable protein. The cells are few and are mainly endothelial. In the malignant disease the fluid is very often sanguineous. The occurrence of a uniformly blood-stained effusion in a middle aged or elderly person is strongly in favour of malignancy.

TREATMENT:—The treatment of tuberculous effusions is different from that of non-tuberculous effusions. In non-tuberculous effusions, conservative treatment is to be preferred. When the quantity of fluid is small or moderate in quantity it may be left alone because in the course of about 5 to 6 weeks, the effusion usually gets absorbed and no other interference may be called for. When the effusion is however, excessive and actually causes distress to the patient or when it is not absorbed even after a reasonable time, (say in about 4 weeks), or when it becomes purulent, the fluid must be aspirated. In all cases of doubt, it is better to treat them as tubercular, till the contrary is proved.

The treatment of tuberculous effusions is practically the same as for pulmonary tuberculosis. A large percentage of such cases subsequently develop pulmonary tuberculosis. Adequate treatment at the outset not only leads to a complete cure but builds up resistance and educates the patient sufficient to minimise the possibility of developing pulmonary tuberculosis later.

Four principles govern the treatment of tuberculous effusions:—

(1) Absolute rest in bed till the temperature keeps normal for a period of 2 weeks and then routine rest for a minimum period of atleast 6 months.

(2) A high protein diet with large quantities of vitamins A, D and C.

(3) Treatment of the effusion itself.

(4) After-care of the patient.

In all cases of tuberculous effusion, the best thing would be to aspirate the fluid at the earliest possible moment, to replace it by air and then to look for any lesion that is present in the lung, by X-ray and clinical examination. It is difficult to detect a lung lesion when fluid is present; so the fluid has to be removed. Even if no active lesion is found at the first examination, subsequent examinations should be made to detect any focus in the lung. If there is any focus, the collapse must be kept up, by artificial pneumothorax till the lung lesion has completely healed up. If no lesion is found in the lung after aspiration, allow the lung to expand but keep the case under observation for a period of three to five years. If necessary, aspiration may be repeated after a week or ten days. Some people still believe in and advocate conservative treatment. But in tuberculous effusions it is not the correct procedure for the following reasons:—

(*a*) If the fluid is left alone, large adhesions may form and prevent further collapse therapy when necessary; (*b*) tuberculosis is largely a disease that affects the upper part of the lung. During treatment we always try to keep as much as possible of the normal lung tissue functioning. In effusions, it is the lower half of the lung that is collapsed and the lower half is not usually affected by tuberculosis. If the fluid is left behind it interferes with the normal function of the healthy portion of the lung as it is collapsed under fluid. So there is unnecessary loss of the area of æration; (*c*) in the case of tuberculous pleurisy there is a tendency for the fluid to form again. Presence of air in the pleural cavity reduces this tendency to some extent; (*d*) if the fluid is allowed to stand for sometime, re-expansion of the lung may become difficult; (*e*) the presence of fluid in the pleural cavity is said to encourage the growth of other organisms, especially when tubercular disease is the cause. So the tendency to pus formation becomes greater; and (*f*) toxic symptoms occur more frequently in tuberculous effusion. Aspiration of fluid reduces that toxicity to a great extent and thereby brings down the temperature.

Whenever aspiration is performed, it should be replaced by air. The removal of fluid followed by replacement with air offers several advantages:

(1) Air replacement permits almost complete removal of the fluid.

(2) Intrapleural pressure is not rapidly reduced. Rapid reduction of intra-pleural pressure may cause collapse or shock.

(3) Rapid re-expansion of the lung is prevented. Rapid re-expansion of the lung may give rise to complications like œdema of the lung.

(4) It prevents rapid returning of mediastinum to its original position. Rapid return of mediastinum to its original position after having been in an altered position for sometime may cause pain.

5. It lessens the tendency to recurrence of effusion.

6. Further, it also keeps up the collapse of the lung which, in many cases of tuberculous effusions, is desirable to maintain, especially if infiltrations of the lung parenchyma are also present.

While aspirating, the patient is placed in the sitting posture with heart-rest or in the semi-recumbent posture with back-rest and pillows. Aspiration may be carried out with any of the usual aspirators—Potain's or Dieulafoy's aspirator or with a Burrel's bottle. Air replacement may be carried out with A.P. apparatus. Aspiration is performed fairly low down in the chest, the most convenient spots for puncture being just below the angle of the scapula or in the mid-axillary line in the 7th inter-costal space. A.P. needle may be inserted a little higher up at a convenient spot. The usual procedure is to start the aspiration first and after withdrawal of about 10 to 15 ounces of fluid, insert the A.P. needle. After noting down the manometer readings, air is slowly introduced while the aspiration of the fluid is still proceeding. As the fluid is drained, air gets into the pleural cavity and keeps up the intrapleural pressure. In this way practically the whole of the large effusion can be removed and replaced by air without any discomfort. No hard and fast rule can be laid down as to the total amount of air which may be introduced as this will depend upon the quantity of fluid withdrawn and on the final pressure readings of the manometer which should be on the negative side, usually the quantity of air required is much less than the fluid aspirated.

Instead of making two punctures, the A.P. apparatus may be connected to the aspirating needle with a special device which will permit of the withdrawal of fluid and replacement of air to be done alternately.

It is desirable, within the next 24 hours, to have an X-ray record made of the state of affairs as a control.

Whenever fluid is aspirated it is better to instil in the pleural cavity 200,000 units of penicillin with 0·5 gm. of streptomycin dissolved in 5 c.c. of normal saline. In these cases, if the temperature persists, it is advisable to give a short course of streptomycin, 1·0 gm. intramuscularly every day for about 10 to 15 days together with

P.A.S. 12 gms. a day by mouth in four divided doses. Usually these cases react well to streptomycin and the temperature falls to normal within a week's time.

References :

1. Cecil—Text Book of Medicine, 1946.
2. Conybeare—Text Book of Medicine, 1949.
3. Coope—Diseases of Chest, 1950.
4. Davidson—Diseases of Chest, 1948.
5. Goldberg—Clinical Tuberculosis, 1947.
6. Kayne, Pagel and O'Shaughnessy—Pulmonary Tuberculosis, 1948.
7. Mc Dougall—Tuberculosis, 1949.
8. Meakins—Practice of Medicine, 1950.
9. Osler—Principles and Practice of Medicine, 1950.
10. Price—Text Book of the Practice of Medicine, 1950.
11. Shanks—Text Book of X-ray Diagnosis, 1938.
12. Tidy—Synopsis of Medicine, 1945.
13. Trail—Chest Examination, 1945.

Tonsillectomy in Relation to Rheumatic Fever

According to current knowledge, rheumatic fever is believed to be caused by group A *beta* hemolytic streptococci, and the faucial tonsils are supposed to be the chief source of this infection. Exacerbations, which are very common to this crippling disease, give rise to cardiac damage, and as a preventive measure, the place of tonsillectomy is discussed under the following heads :—(1) Whether tonsillectomy in children will prevent rheumatic fever. (2) Whether it will improve the condition of the patient after the disease has manifested itself. (3) Whether tonsillectomy is justified during the course of rheumatic fever.

There is general agreement among physicians that patients are more susceptible to first infection than the carriers. Secondly, acute hemolytic streptococcal infection, and subsequent rheumatic fever have occurred even in tonsillectomised persons. Thirdly, it seems, there are instances, where it is believed that rheumatic fever has been precipitated by operative procedure.

From the facts presented, and from the experience and teachings of outstanding writers, it is clear that tonsillectomy has no prophylactic or curative effect in rheumatic fever. All the same, as to the indication for tonsillectomy in the presence of rheumatic fever, they do not differ from those in normal individuals. Provided the local factors are sufficiently prominent to warrant removal of tonsils, there should be no hesitation in carrying out operative procedure, remembering at the same time the hazards that depend on the severity of the disease, and also the probability of developing intercurrent diseases provoked by group A hæmolytic streptococci.—(Hallender, A. R., and Fabricant, N. D., *The Eye, Ear, Nose and Throat Monthly*, 30 : 547, Oct. 1951).

FUNCTIONAL UTERINE HÆMORRHAGE*

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FUNCTIONAL uterine bleeding is hæmorrhage from the uterus in the absence of obvious organic disease. It is one of the most frequent conditions met with in gynæcological practice. It is also called, dysfunctional uterine - hæmorrhage.

Sutherland (1949) has stressed the fact that a diagnosis of functional uterine bleeding should not be made until curettage has been carried out and the endometrium has been examined histologically. On an analysis of the endometrial histology in 1000 cases of abnormal uterine bleeding in the absence of gross pelvic pathology, all patients with bleeding after menopause and all abortions being excluded, Sutherland found 139 instances of organic pathological lesions of the endometrium, chronic endometritis occurring in 110 cases, uterine polypi in 11, tuberculosis in 10, and malignant disease in 8 cases.

The causes of functional uterine bleeding may be divided into three groups. (1) Metropathia hæmorrhagica; (2) menorrhagia associated with irregular shedding of the endometrium; (3) other causes—emotional, nervous and sexual factors.

Metropathia hæmorrhagica.—This occurs in a fairly large number of cases of functional uterine bleeding.

AETIOLOGY :—The exact cause of the condition is not known. It is possible to find one of the following, which may be responsible. (1) Anterior pituitary gland not producing sufficient F.S.H. and L.H. This is not yet proved. (2) Sawyer thinks, while the anterior pituitary gland normally produces its own hormone in cyclical fashion, in metropathia hæmorrhagica the F.S.H. is constantly produced leading eventually to bleeding from an over-stimulated and hyperæmic endometrium. (3) The ovaries may be refractory, especially this is possible in immature or senile ovaries. This might explain the frequency of the complaint near puberty or at menopause. (4) The thyroid may be at fault sometimes. Hypo- or hyper-thyroidism causing disturbance of the anterior pituitary. (5) Emotional and general nutritional disturbances may act similarly *via* the higher centres—the hypothalamus.

PATHOLOGY :—(1) Either one or both of the ovaries enlarge and contain unripened follicles, which may or may not contain an ovum. There is no corpus luteum. Rarely a non-functioning C.L. may be present. The cystic follicles contain a large quantity of œstrogen. (2) The uterus shows myo-hyperplasia and cystic hyperplasia of the endometrium, very often with polypoidal projection into the cavity. In the absence of a lutenizing factor, œstrogenic

* Specially contributed to THE ANTISEPTIC.

stimulation leads to endometrial hyperplasia. Microscopically the endometrial glands are increased in number, are cystic and are usually lined by a single layer of flattened cuboidal epithelium. Sometimes polypoidal projections into the gland-lumen are seen with many layers of an epithelium. The glands are variable in size. Some are dilated and cystic, giving the appearance of the Swiss-cheese endometrium, described by Novak. No secretory activity is seen, according to some writers. But Sutherland (1949) reported 861 patients complaining of abnormal uterine bleeding in the absence of palpable pelvic disease and organic disease of the endometrium. He found 265 cases with endometrial hyperplasia, 26 with irregular ripening, 13 with irregular shedding and 10 with atrophy of the endometrium. In the remaining 547 specimens, the endometrium appeared normal.

Clinical features.—Metropathia hæmorrhagica is more frequent at puberty five to ten per cent and at menopause, but it often also occurs during the intervening period. The bleeding may be continuous but in cases of puberty it may be cyclic menorrhagia. In about half the number of cases there is a history of amenorrhœa for one or two months. There is never any history of dysmenorrhœa. Hoffman (1945) found 65% with a history of one or more full term pregnancies or abortions. *Per vaginum*, the uterus is soft, bulky, with enlarged cystic ovaries on one or both sides. Speculum examination may show a bluish soft cervix simulating pregnancy.

Diagnosis :—The history may be fairly suggestive but biopsy is necessary. In ideal circumstances there should be an endocrine survey including estimates of œstrogens, pregnandiol and gonadotrophic hormones, B.M.R. and blood-cholesterol. A thorough blood-count and tests for bleeding-time, blood-pressure, and urine examination for 17 ketosteroids should be done.

Differential Diagnosis :—Abortion, ectopic pregnancy (no pain) and cancer of the body of the uterus.

Treatment :—It is to be remembered that the condition is self-limiting. Simple measures will often cure the condition, if the bleeding is not severe. Re-assurance is important as also rest during the time that bleeding continues. Iron should be given when the blood count indicates its need. Curettage will cure twentyfive to fifty per cent of cases. If there is hypothyroidism, thyroid extract in doses varying from one to four grains daily may be given. Thyroid extract is contraindicated in the thin, nervous type of patients. In more severe cases, especially at puberty, blood transfusion may be necessary. Radium treatment is inadvisable for young women. At menopause however, radium treatment or hysterectomy may be necessary and useful.

TREATMENT AT PUBERTY :—Bleeding may be severe and prolonged in these cases. A thorough curettage is necessary for diagnosis. This may benefit some but most cases fail.

The treatment of functional uterine bleeding has become greatly simplified since the advent of œstrogen and progesterone. They have made the use of radical measures like repeated curettages, radium and X-ray therapy and hysterectomy unnecessary. Therapy with œstrogen and progesterone corrects the break in the reciprocity between ovaries, pituitary, and endometrium, restores normal steroid metabolism, regulates the bleeding cycle, permits a return of normal ovarian function compatible with fertility (Hamblen). The therapy is by the oral route and does not cause trouble like injections to the patient.

Hæmostasis.—As most patients usually seek medical advice while the bleeding is on, the first problem is to arrest the bleeding promptly. This can be achieved in two days. It is simpler to administer œstrogens orally in order to raise the œstrogen blood levels, restore endometrial growth and thereby stop bleeding. Hæmostasis may be produced in two to five days by giving 5 mg. of stilboestrol every four hours or 25 mg. of ethinylœstradiol every two hours. If the bleeding is profuse or if the patient is very anæmic, it may not be wise to delay things ; curettage will stop the bleeding quickly and allow microscopic examination to be done.

Medical curettage.—Though the bleeding may be stopped by the use of stilbœstrol, it will soon recur as the œstrogen secretion by the cystic ovaries will still continue. This is prevented by giving progestrogen. It is well known that withdrawal bleeding occurs after giving adequate quantities of progestrogens. The bleeding is normal in amount and character and results in complete shedding of the superficial layers of the endometrium. Fuller Albright calls it a medical curettage. The next bout of metropathic bleeding can be forestalled by inducing progestrogen withdrawal bleeding. Progestrogen treatment should be started as soon as the hæmostasis has been effected by œstrogens.

I have found the use of oestrone sulphate (Premarin) and Pranone (Schering U.S.A.) as described by Hamblen very effective in the treatment of functional uterine bleeding. 1·25 mg. tablets of premarin are given three times a day for twenty days. After the bleeding has been checked by giving adequate doses of premarin or soon after a curettage, this treatment is started. After giving oestrone sulphate 1·25 mg. t.d.s. for ten days, pranone (oral progestrogen) 10 mg. t.d.s., is given along with premarin from the 11th to the 20th day. Three such courses are given. In some cases the dose of oestrone sulphate for stopping bleeding may have to be increased to two tablets t.d.s., that is, 7·5 mg. It must be remembered that the ratio of pranone to œstrone sulphate is 10 mg. to 1·25 mg. of oestrone sulphate. Pregnancy has been reported after

following this treatment. The Schering Company have now placed on the market buccal tablets of œstrogen and progestrogen which are reported to be very active.

In some cases especially in the young patients, a blood transfusion has to be resorted to, before favourable results could be obtained. In the few cases in which repeated curettages and hormonal treatment fail, hysterectomy may have to be resorted to. In such cases I prefer vaginal to abdominal hysterectomy as the shock is less in the former, and the patient can leave the hospital in a week's time, feeling quite fit. In women nearing the menopausal age, the choice between radium treatment and operation has to be made. I prefer operation as there is always a risk of carcinoma of the cervix or body occurring at some future date even after the radium treatment. Androgen therapy is recommended by some gynæcologists for the control of bleeding. Perandren (Ciba) 25 mg. intramuscularly every day for six days followed by cyclical treatment with stilboestrol and progesterone is sometimes employed with success. Prolonged use of male hormone is attended with the risk of hirsutism and change in the voice as also hypertrophy of the clitoris. Treatment of irregular shedding of the endometrium is very unsatisfactory. Repeated curettage may be attended with success. If the patient is nearing menopause hysterectomy or radium treatment may be resorted to. Nervous or sexual factors may cause irregularity and/or excessive uterine bleeding. I have met with many cases of uterine bleeding caused by anxiety, worry, shock, frustration in love, loss of a dear one, and change of residence etc. During the course of taking the personal history of the patient, a definite effort must be made to ascertain if any psychic, emotional, or sexual factor is responsible for the condition. In such cases endocrine or operative treatment may fail while psychotherapy will yield excellent results.

References:

1. Sutherland (1949).
2. Novac—Text-book of Gynæcology (Second Edition).
3. Browne, F. J.—Post-Graduate Obstetrics and Gynæcology.
4. Bishop, P.M.F.—Gynæcological Endocrinology for the Practitioner, (2nd Edition).

Endometriosis and Benign Metastasis

On the basis of 1371 cases of endometriosis or adenomyosis detected in an examination of 24,436 patients (incidence of one in 18) Javert formulates his concept of endometriosis on the principles of cyclical hæmoplasia and benign metastasis. He shows that benign endometrium may spread (1) by direct invasion of the myometrium (adenomyosis) and of the endosalpinx; (2) by exfoliation of cells through the fallopian tubes with implantation on the ovaries and peritoneum; (3) by metastasis to lymph nodes; and (4) by hæmatogenous metastasis locally and to distant organs such as the kidney. He stresses that the increase in recent years in endometriosis coincides with widespread use of contraceptives; fewer cervical dilatations and uterine suspension operations and the commoner use of intravaginal tampons during menstruation. Endometrial carcinoma is therefore, getting more frequent too.—(*Am. Jour. Obst. Gynaec.*, 62, 477–488, Sep. 1951).

ACTION OF CAFFEINE ON GASTRIC JUICE*

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BEVERAGES like tea and coffee, the important active principle of which is caffeine, are now very popular both amongst the rich and the poor and their popularity is increasing daily. This is not surprising as caffeine is a real cerebral stimulant and is also effective in relieving fatigue. It is not without reason that the poet found in tea, "the cup that cheers but not inebriates", or the ancient pious Tibetan monarch when welcoming our great Buddhist Saint Dipankar Sreenjayan, the Ateesha, offered him tea as a celestial drink. The action of caffeine as a circulatory stimulant and as a diuretic is also well known. But its action on the gastro-intestinal tract is not always well understood and requires further investigation, especially as regards the remote pathological effects produced by an excessive indulgence in these beverages. This is now all the more important because even the poorer section of our people have taken to these drinks in large numbers, for stimulating them and very often also to relieve their pangs of hunger. Caffeine is known to stimulate the gastric secretion (Best and Taylor, 1945) which *should* stimulate the appetite, but actually produces just the opposite effect. The effect of caffeine on gastric secretion was investigated in human subjects with the help of the usual examinations, with the following results :—

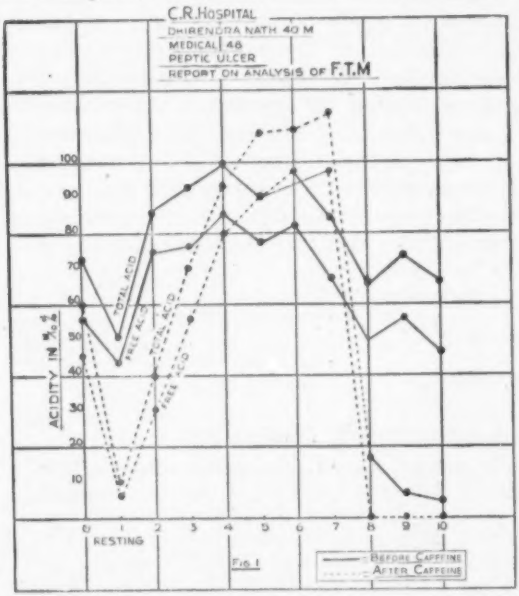

Fig. 1

(*a*) Intramuscular injection of caffeine sodium benzoate gr. xv causes within 15 minutes a steep rise in the acid curve followed by a precipitate fall. *(Fig. 1).*

(*b*) Injection (gr. vii p) also appears to increase the gastric motility in some cases and the stomach empties itself during the test meal examination much earlier than usual. (*Fig. 2 vide page 21).*

(*c*) Caffeine sodium benzoate gr. xv when administered orally stimulates the gastric acid secretion and the acid curve may even assume an ascending character.

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The effect of oral administration on the gastric acid secretion appears to be more prolonged than that produced by parenteral administration. *(Fig. 3).*

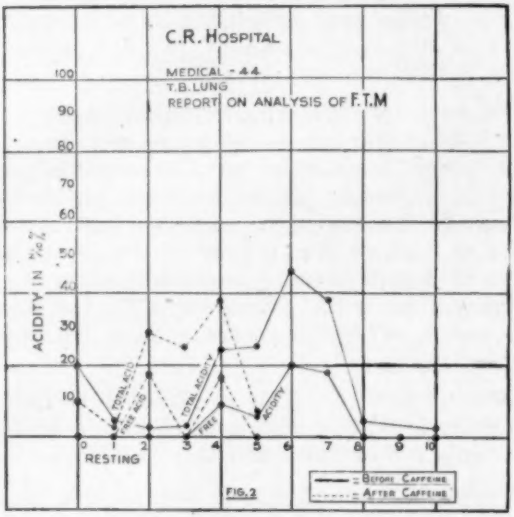

FIG. 2

Frequent indulgence in drinking tea etc., would produce repeated stimulation on gastric secretion. If this happens, in an empty stomach it is likely to produce gastritis and may even lead to gastric ulcer. Gastric ulcer can actually be produced in experimental animals by administering intramuscularly caffeine in bees-wax, thereby producing the continued and prolonged action of this alkaloid on the gastric secretion, (Best and Taylor, 1945).

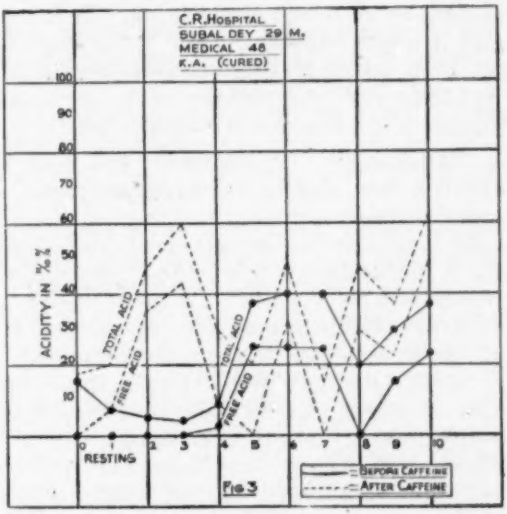

Fig 3

From the above facts it would appear that caffeine is harmful for persons suffering from hyperchlorhydria, gastritis and peptic ulcer.

Conclusion.— (1) Caffeine stimulates the secretion of gastric hydrochloric acid. So it should not be taken on an empty stomach.

(2) Frequent and excessive indulgence in drinking beverages rich in caffeine, especially on an empty stomach is likely to produce gastriits and may lead also to gastric ulcer.

(3) It is unsuitable for persons suffering from gastritis, hyperchlorhydria and peptic ulcer.

Reference :

Best, C. H. and Taylor, N. B., (1945)—The Physiological Basis of Medical Practice, 4th Ed., p. 447.

CORRECTION OF PRESBYOPIA*

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THE physiological condition of the eye, indicating onset of senile changes in the structure of the eye, is one of the commonest refractive conditions seen in ophthalmic practice.

The usual formula advocated by western ophthalmologists for simple presbyopia is + 1 D Sph. at the age of 40 years and subsequently add + 1 D Sph. for every 5 years of age, the maximum being + 4 D Sph. at the age of 55 years. This formula is however, a flexible one and may have to be varied to suit the individual needs, habit and occupation of the patient; thus for example, a compositor needs more powerful lenses at a comparatively early age, than one who is doing ordinary office work. Similarly a chronically ill and weak patient needs lenses of higher power than a healthy person of the same age.

Our records show a different picture. The presbyopic trouble starts at or near about 35 years of age in males and even a little earlier in females. Let me explain how I reached this conclusion.

On a thorough examination of some of the patients of this age, no other refractive error could be noted and this does not mean the setting up of a new hypothesis. It is merely a personal observation and it needs substantiation from my colleagues. In the majority of these patients, there is some degree of associated hypermetropia but they are not usually easy to tackle. Some of them desire glasses of an alarmingly high power!

Ordinarily our people do not seek advice and do not worry about a low degree of hypermetropia, because they are able to carry on with some extra-strain on the ciliary muscle. But there is a limit to this continuous strain on accommodation and as soon as the hypermetropia intensifies, they take to glasses not necessarily prescribed by a qualified doctor. Such persons naturally need the addition of full hypermetropic correction to presbyopic glasses. So at about 35 years of age a patient needs about + 1·5 D Sph. to + 2·5 D Sph. One may ask "Why is this error not total hypermetropia? The answer is that he feels difficulty in near-work with only hypermetropic correction and needs the addition of convex glasses. These will use glasses only for near-work because these glasses will not give clear distant vision and they will not have bifocal glasses nor two pairs of spectacles. In distant vision they will therefore, constantly be straining their eyes and so at every change of glasses, one has to add increased hypermetropic correction along with the required presbyopic correction. A patient aged

* Specially contributed to THE ANTISEPTIC

50 years accepted +7 D Sph. for his near work and he never bothered about his distant vision which was 6/18. He insisted on being prescribed glasses only for reading purposes! Male patients are thus careless and female patients do not use glasses out of shyness and when forced by circumstances, use them only while reading. So the practice of prescribing a so-called presbyopic lens of a higher power at a comparatively early age is the result of such neglected hypermetropia.

A second important fact is that quite a large number of patients do not in the first instance seek a qualified eye surgeon but purchase glasses from the itinerant so-called optician going from place to place with glasses of different diopteric strengths starting from +1 D Sph. upwards. The patients themselves try them on, one by one. Since + 1 D Sph. is the lowest and the first pair to be put on, it is generally rejected and the minimum sphere that they usually prefer to have is + 2 D Sph. for reading, and they do not worry in the slightest about their distant vision. Naturally when such patients go later on, to the qualified doctor, they will not have glasses of a power lower than what they had been wearing. If they are prescribed glasses of lesser diopteric strengths, they will not use them and will curse the doctor for the trouble they have been put to. They will not listen to the qualified doctor's advice nor benefit by the greater comfort which they would get by using the correct glasses.

Another important factor which adds to the trouble is the poor illumination by night, which throws extra strain on accommodation—thereby aggravating both the hypermetropia and the presbyopia. The usual advice given to a patient to come after a year for a check-up is always ignored in practice and he will come back only when he is obliged to do so by difficulties in proper vision.

Therefore, many factors have to be considered by us before prescribing glasses to the patient, and we always look to the comfort of the patient as being of paramount importance.

SYMPTOMS:—Patients will state of their own accord that their vision for distance is very good and their only trouble is the difficulty in reading, especially at nights, in the dim light. If they used bright light, they could read for a little while. This practice of contracting the pupil, using bright light to enable one to read for a little while, often leads to spasmodic contractions of the ciliary muscle, resulting ultimately in severe asthenia and failure of vision.

Ladies complain besides the difficulty in reading, of inability to thread the needle. This trouble leads to a psychoneurosis in some and it is usually somewhat difficult to treat such patients. Some patients complain also of watering of the eyes, a gritty sensation with slight redness and some discharge.

SIGNS :—We do not generally get any positive finding except the slight congestion and trachoma in some cases.

TREATMENT :—In the light of what has been recorded above, it is obvious that it is not possible to lay down any rule-of-thumb procedure for the treatment of presbyopia. Comfort to the patient should be the guiding factor of paramount importance, *e.g.* a carpenter or a book-keeper will feel comfortable in his work at a distance greater than that usually prescribed while the seamstress or engraver of the same age, with the same refractive error would have been forced to use glasses in order to see well at a working distance of 20 cm.

The ideal will therefore, be to estimate the near point for each eye separately in every case and additions should be based upon this factor and *not* upon the age. If one finds that the near point is different for the two eyes then the addition of glasses should correspond to that and should not be a simple addition of glasses of the same strength to both eyes. Only then would one feel comfortable, but this ideal is practicable in simple presbyopes, whom we seldom get. What we have to do usually is to add refractive error to the presbyopic glasses, the latter being of the same strength for the two eyes.

I saw a 50 year old patient who took + 4 D Sph. about 4 years ago and who now takes + 6 D Sph. His distant vision was 6/9 P. He did not heed my advice and persisted in his demand. If I had not satisfied him, he would have gone to an optician–his most desirable friend and got the glasses of his own choice. Many patients are known to behave like that.

The disadvantage of prescribing lenses of a higher strength lies in breaking the balance between accommodation and convergence. But these patients have excellent convergence power and even after wearing glasses of a higher strength, they do not suffer from any convergence deficiency. The conscientious occulist-starting practice-may find it very difficult to handle and satisfy such patients. In such cases the best thing to do would be to make the patient feel comfortable, and warn him of the consequences he may have to face, as a result of his stubbornness.

Some patients, when once they get a suitable pair of spectacles, would not like to change them at any cost. I had a patient who was prescribed glasses in 1933 by an eminent ophthalmologist (who is no longer with us) but who had lately been having trouble of various kinds with his vision. He could not be persuaded by me to change his glasses. He said, "I will have a new pair of glasses but *of the same strength*, and you please give me some drops or ointment." In that case I was forced to prescribe for him only some sedative eye-drops.

Many aged patients would like to be prescribed besides glasses, some drops or ointment for local application. These have

to be prescribed as a routine, not merely to satisfy them but also to relieve the congestion and deal with the trachoma. What I have detailed above may smack of trying to please the patients rather than doing what is the correct thing to do. My answer to that is:—A satisfied patient is the greatest asset that a doctor can aspire to have, consistent of course, with professional decorum.

References:

1. Elder Duke.—Text Book of Ophthalmology: Vol. VI- p. 4424.
2. Thorington James.—Refraction of The Human Eye: p. 358.
3. Goulden Charles.—Refraction of The Eye: p. 134.
4. Elder Duke.—Practice of Refraction: p. 136.

Intra-ocular Acrylic Lenses—A Recent Development in the Surgery of Cataract

Dr. Ridley, Eye Surgeon of St. Thomas' Hospital, England describes a new operation in which an artificial lens is inserted in the eye after cataract extraction. So far he has performed this operation on 27 eyes. The acrylic lens was too thick and of a highly refractive power in 2 cases. The 25 other cases contain an acrylic lens of the new specification. In only one of the 25 cases, that of an old man of 75 years of age, there was trouble, because the section was very slow to heal. The others are all quite satisfactory in that binocularly the sight is better than with simple extraction alone. These 24 are surgically quite satisfactory and have central and circular or nearly circular pupils, lenses in good position, normal tension and no active inflammation. Dr. Ridley considers that it is possible to insert an artificial lens into the eye without causing inflammation or glaucoma, for at least 2 years. This operation provides ordinary cataract patients relief from disabilities encountered in the use of very strong glasses. He indicates however, that overconfidence is not justified, but the new technique with future modifications may well be the best that can be evolved, until biochemical and endocrinological research teaches us how to prevent cataract from developing.—(*Ridley, H. Br. Jour. Ophthalmol.*, Mar. 1952). (From *the Sight Saving Review*, Fall 1952).

Surgical Treatment of Glaucoma—A Study of 75 Consecutive Cases

Gill describes an operation for glaucoma—iridencleisis, which gave uniformly good results in the treatment of secondary and chronic glaucoma in 75 consecutive cases. From the standpoint of arresting the disease and affording relief of pain, the operation was uniformly successful in all the 75 cases in that, the tension remained within normal limits. The author does not thereby intend to convey the idea that the vision of these patients will be the same for all time, as the vision may continue to decrease with the lapse of time. This is due to damage to the tissues of the eyes even prior to the operation.—(*Virg. Med. Monthly*, 79, 209-11, 1952 and *S.S. Rev.*, 1952).

PERNICIOUS ANÆMIA*

ÆTIOLOGY AND TREATMENT

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IT was in the year 1855, that Thomas Addison gave a very vivid and interesting description of pernicious anæmia. "The disease makes its approach in so slow and insidious a manner that the patient can hardly fix a date to his earliest feeling of languor which is shortly to become so extreme."

Pernicious anæmia is a chronic disease which usually occurs during or past middle life characterised by macrocytic anæmia with megaloblastic reaction of the bone marrow and histamine-fast achlorhydria.

When Addison described the disease he had no idea about its ætiology. The knowledge regarding ætiology developed, only after liver therapy was introduced by Minot and Murphy (1926) as the first effective treatment. With the introduction of liver therapy and the theory of the ætiology of the disorder, advanced by William Castle (1929) our knowledge advanced.

The main characteristic of this condition is the inability of the immature cells which crowd the bone marrow, to mature. Hence if the sternal marrow slide of a patient with pernicious anæmia is examined, we find numerous megaloblasts while in the normal individual's sternal marrow, only very few of these are occasionally seen. The maturation is unable to occur in the absence of the active principle of Castle, the result of interaction between the extrinsic and intrinsic factors. The extrinsic is that contained in the food while the intrinsic factor is contained in the gastric juice, but is *not* one of the digestive ferments. This antianæmic factor is stored in the liver. As a result of a series of experiments, Berk, Castle *et al* (1948) suggested that vitamin B_{12} was the extrinsic factor in food. Berk further stated "It is therefore, possible that the function of the intrinsic factor in normal gastric juice is to facilitate the absorption by the intestines of vitamin B_{12} rather than to react with the extrinsic factor as assumed hitherto."

I shall now deal with folic acid (Pteroyl-glutamic acid—PGA). Experiments have shown that though folic acid used in pernicious anæmia improves the anæmia, it has no action on neurological complications. PGA is not the extrinsic factor, since it is active without predigestion with gastric juice. It is not Castle's intrinsic factor which is readily destroyed by heat. It is not the active principle present in liver extract; since the effective daily dose is 10 to 20 mgm., whereas the daily requirement of potent liver

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extract contains 0·02 to 3·7, microgram of PGA. Heinle and Bethell found that PGA is present in food as pteroylhepatoglutamic acid (PHGA). In normal persons PHGA administration produces the excretion of PGA in the urine, whereas in pernicious anæmia no such response occurs. However in 3 patients with pernicious anæmia controlled by liver, PHGA administration produced the excretion of PGA. Hence they concluded that vitamin B_{12} acts as a conjugate in splitting PHGA to PGA which in turn stimulates erythropoieses. These findings are however disputed by Wilkinson and Israel, who state that vitamin B_{12} has no direct action in splitting PHGA to PGA but some other conjugates which are normally present as ceropterin and diopterin are responsible. Bethell (1948) showed that aminopterin (Folic acid antagoniser) inhibited the response to vitamin B_{12}. They concluded that vitamin B_{12} and folic acid act in synergism.

SYMPTOMS AND SIGNS.—The patient gradually loses weight. Extreme languor and anæmia are the main features.

CHANGES IN BLOOD.—The outstanding variation in a properly made and well stained blood-film is the size of the RBCs, which is distinctly above normal. We may say that there is a general reduction of formed elements in the blood. This is true of RBCs, WBCs, and platelets. In addition, the essential feature is a qualitative change with a reversion to the fœtal type of red-blood-cell. Macrocytes, basophilic stippling of red cells, megaloblasts and normoblasts are found. These macrocytes can be detected easily by employing the Prince Jones method of projecting the film upon the surface and measuring the diameter of the cells. The number of RBCs is usually low. The colour index is always above one. When the symptoms are well developed the RBC is 1·5 million and the Hb percentage 40 with a colour index of 1·3.

Another important feature about pernicious anæmia is the histamine-fast achlorhydria ; nervous symptoms are common, which often precede the anæmia. At first the patient complains of numbness and tingling in the feet and a similar sensation in the hands. Tenderness of the calf muscles is an extremely common symptom. The plantar reflexes are flexor at this stage. This is the polyneuritic stage. Later, deep sensibility may be affected with loss of vibration sensation over tibial malleoli at first. The appearance of the extensor plantar response indicates that the disease is in the spinal stage with definite involvement of the pyramidal in addition to the posterior columns when the characteristic symptoms of subacute combined degeneration is produced.

TREATMENT: —Liver extract crude or refined is given intramuscularly according to the degree of fractionation they have undergone. Crude liver extract may be expected to have an activity of 1 to 5 USP units per cc., and refined of 5 to 15 units. Crude liver

extracts are given in doses of 4 c.c. on 2 successive days and thereafter 2 to 4 c.c. every week until the blood is normal. Refined liver extract is given once a fortnight in 4 c.c. doses. Allergic reactions to liver are usually met with as urticaria or local reactions with pain, induration, erythema and pruritus. I had a case of severe anaphylactic shock following the intramuscular injection of liver extract. For such patients I give 0·5 c.c. of adrenaline 1 in 1000 subcutaneously and one ampoule of Synopen I.V. I have subsequently discontinued the use of liver for these patients and given them vitamin B_{12}. The dosage followed is 15 microgramme of vitamin B_{12} daily for the first week and thereafter thrice weekly until a complete remission has taken place. I have noticed no allergic or toxic effects with vitamin B_{12}; some physicians believe, that concentrated liver extract combined with vitamin B_{12}, offers better results than vitamin B_{12}, alone.

Ulcerative Colitis and Carcinoma

Ulcerative colitis is not a common disease and its association with carcinoma of the rectum and colon is not generally recognised. Brian Counsell and Cuthbert Dukest have studied the clinical history and pathology of thirteen cases of cancer of the rectum or colon following chronic ulcerative colitis, and they have come to the following conclusions:—

1. Carcinoma occurs more frequently in patients who have had chronic ulcerative colitis than those who have not had the disease—in other words, chronic ulcerative colitis predisposes to carcinoma.

2. The extent of this predisposition to carcinoma has been under estimated in the past because patients have not been kept under adequate supervision and because of the clinical and pathological difficulties in diagnosis. In the St. Mark's series of sixty-three surgically treated cases of chronic ulcerative colitis the incidence of carcinoma was 11·1 per cent, but in those eleven cases of chronic ulcerative colitis which survived for more than ten years five cases ultimately developed carcinoma—almost half. It is obvious that the percentage of malignancy recorded in any series of cases will vary with the severity of the disease, its duration, the age of the patient, the period of observation, and the experience of the observer.

3. When carcinoma follows chronic ulcerative colitis it usually grows rapidly and metastasises early.

4. Carcinoma following chronic ulcerative colitis has a very bad prognosis. This is due to the rapid spread of the tumour and to difficulties in diagnosis. Most patients are already incurable by the time carcinoma has been diagnosed.—(*Brit J. Surg.*, May 1952). (*The Medical Press*, 29-10-'52.

DENTAL PAIN*

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A VERY common complaint that a general medical practitioner meets with is tooth ache or odontalgia. Pain is not a disease but is commonly believed to be a purposeful natural phenomenon which draws the attention of the patient to the physical presence of disease or injury. The intensity of pain depends mostly upon the nature of the pathological condition present and partly also on the endurance of the patient. The character of dental pain is sometimes expressed as sensation, soreness, tenderness, aching, lancinating or dirting, burrowing or throbbing according to the pathological disturbance within the various parts of the tooth structures and its associated parts. Toothache which induces a patient to seek the advice of a general practitioner is to get relief of the painful condition, conservation of the tooth being only a secondary consideration.

Pain as described by the physiologist is a sense largely dependent on the proper functioning of the sensory nerve fibre. As the teeth are supplied by a branch of the fifth cranial nerve with an abundance of sensory fibres it is natural to expect sensation even with the slightest injury to the hard structures of the tooth *i.e.*, enamel and dentine.

The enamel.—The enamel is the hardest and highly calcified structure in the tooth which normally protects the crown. The degree of calcification gets less and less as the dento-enamel junction is approached. The absence of the outer layer as a result of incomplete calcification, or some pathological condition *i.e.*, caries, erosion, abrasion or trauma, makes the tooth very sensitive though the dentine is not exposed. Strictly speaking, the enamel does not convey sensations, as the other hard structure of the tooth *i.e.*, dentine. When the outer denser layer of enamel breaks, the inner layer which is comparatively less dense becomes exposed to the action of the oral fluids which are often acidic in nature. The acid penetrates through the inorganic structures of enamel into the dento-enamel junction, impregnates the inter-globular spaces of Czermak which ultimately causes a tactile sensation to the protoplasmic contents of the dentinal tubule. Sensation in the enamel is largely dependent upon the saturation of the enamel matrix and the quantity of the acid content of the saliva.

The dentine.—Sensation in the dentine is more acute and intense than in the enamel. When the enamel is destroyed by erosion, abrasion, attrition, trauma or by caries and the dentine is exposed to the oral fluids of the mouth, the tooth becomes

* Specially contributed to THE ANTISEPTIC.

hypersensitive. Even the slightest scratch with any hard substance will cause pain. Cold or hot drinks and cold blasts of air are unbearably painful. Patients complain of pain while taking sweet or sour things. This is due to the external physico-chemical influence which interferes with the surface tension, absorption and diffusion. The dentine is traversed by the dentine tubules containing a protoplasmic fluid; the lymph and structureless thread, carry impulses from the surface to the pulp. Sugar increases while acid decreases the surface tension as a result of which the physical properties of the contents of the dentinal tubules are altered either by compression or by distension, which is at once transmitted to the nerve filaments.

When caries is limited to the hard structures of the tooth the contents of the dentinal tubules are irritated in the same way by acidity and by bacterial metabolism. As the cavity becomes deeper and nearer to the pulp, the intensity of sensation gradually increases which ultimately irritates the pulp tissues though unexposed. The pain in that case is sharp, and lancinating in character. Pain on percussion is not noticeable. In simple acute pulpitis caused by bacterial invasion or pulp nodules or by the action of chemicals like orthophosphoric acid or arsenic trioxide the pain becomes severe in nature.

The pulp.—In simple exposure of the pulp, the pain is not continuous but patients experience pain while taking hot or cold liquids or while masticating. In the acute suppuration or destructive stage the pain becomes violent, throbbing and continuous; increases with application of heat. Chronic hyperplastic pulpitis which is commonly known as pulp polypus is not painful to mere touch but produces pain on increased pressure; due to the disappearance of odontoblasts the patients seldom complain of real dental pain as found in other type of pulpitis. In degenerative condition of the dental pulp, more or less complete absence of sensation is noticed. Patients rarely complain of pain so long as the infection is confined to the root canals, but when it reaches the periodontal membrane and the structures around, great pain is felt.

The periodontal membrane.—Disturbance in the periodontal membrane may be caused by: (1) Infection from the pulp; (2) infection from the gum; (3) injury of a mechanical nature; and (4) injury from chemicals.

1. *Infection from the pulp*:—In caries as well as in trauma when the pulp is involved, the ultimate fate of the pulp is degeneration, and putrefaction. The infection along with the putrified material and the gas contained therein passes through the apical foramen and disturbs the periodontal membrane and other surrounding structures. Pain in that case is dull and steady in the primary stage and throbbing and burrowing in the acute suppurative stage. The tooth becomes elongated and very sore to the touch. Ordinary

approximations of the teeth produces pain; swelling and aching pain in the lymph nodes are observed. In chronic apical suppurative pericementitis and in chronic proliferating pericementitis a dull continuous pain and may be observed as long as the purulent material comes out through a fistula or through the paths of drainage established by surgical means.

2. In case of infection of the gum as in ulcerative stomatitis or paradontosis the pain does not become so acute unless a periodontal abscess or a sequence of the existing cul-de-sac is observed.

3. In case of injury of a mechanical nature, the fractured portion not only causes pain in the tooth itself but also in the surrounding structures and the intensity of pain is dependent on the traumatic injury.

4. Arsenic trioxide is generally used for the debilitizing of the pulp, and when it is used while there is a pathological condition of the pulp, the irritation set up by the powerful oxidation and reduction due to the pharmacologic action of arsenic increases the pre-existing neuritis and very severe pain results. When arsenic is left in the cavity for a number of days, it passes through the apical foramen and causes not only injury to the periodontal membrane but also to the surrounding structures of the tooth, which may lead to arsenic neurosis. Sometimes arsenic packed into the proximal carious cavities may leak and result in destruction of dental papillæ and the marginal periodontal membrane.

Pain due to hyperplasia of cementum:—Overgrowth of cementum or hypercementosis which is the result of chronic irritation, occasionally produces pain. The pain is usually very indefinite and not localised but becomes dull and continuous.

Reflex odontalgia:—Tic douloureux—paroxysmal neuralgia of the trigeminal nerve gives rise to paroxysmal pain of a sharp stabbing nature. It should be considered a disease of the nerve fibres rather than a dental disease. Extraction of teeth is contraindicated as it gives abnormal pressure and contraction of the nerve terminals. Sometimes diseases of the eye or of the maxillary sinus, gives rise to pain in the adjacent teeth. Syphilis, diabetes, influenza and pregnancy cause pain in many cases, referrable to teeth. Impacted teeth and retarded eruption exert pressure upon the nerve fibres, causing pain neuralgic in character. Root remnants in the jaw frequently cause obscure pain.

Aerodontalgic:—It has been found out during the World War II that ærodontalgia is very common amongst the members of the air force. Chronic pulpitis or slight pulpitis under a filling give rise to some pain when members of the air force fly at high altitudes where the atomospheric pressure is markedly low. Signs and symptoms of pain appear and disappear varying with the altitudes of flight.

APPENDICULAR MASS*

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"WHEN a lump or mass is present early in an attack of acute appendicitis, it is probable that the bulk of the swelling is due to a mass of great omentum performing its constabulary duties"– Hamilton Bailey, and that is what I mean by appendicular mass. I shall first deal briefly with the history, ætiology and clinical features of appendicitis and then with the pathology and medical treatment in detail. I shall not go into the diagnosis, differential diagnosis and surgical treatment in this paper.

Historical survey.—The Egyptians preserved their bodies in a mummified state by embalming and when the mummified bodies were later examined, many abdominal conditions were discovered including appendicitis. The Hindus, though advanced in surgery, did not recognise this condition. During the Roman period, Celsus, recorded observations on the appendix. In 1524, Baringario Da Capri of Bologna was the first man to note the appendix of the cæcum. In 1543, Andreas Vasalius described the appendix as a worm. In 1711, Heister first removed an appendix in a *postmortem*. In 1759, Mistivier of France was the first to do appendicectomy. In 1824, Villarny suggested that the colic in the right iliac fossa may be due to appendicitis. In 1827, Melier warned about the fatal results of the perforation of appendix. In 1839, Addison and Bright described incision and drainage of appendicular abscess. In 1885, Symmond removed the internal appendix. In 1886, Fritz described the perforation of appendix and was the first man to name the condition as "Appendicitis". In 1889, Charles Macburney described the point of maximum tenderness (which has come to be named after him) and which is a point 1½" to 2" from the anterior superior iliac spine in the spino-umbilical line. In 1894, he described his famous incision called Macburney incision. In 1900 Fowler described the Fowler's position and the irony of it is that he himself died of gangrenous appendicitis, like William James Mayo of Mayo Clinic the great gastric surgeon who died of cancer of stomach in 1939. Later various famous surgeons developed the technique of treatment for example, Morris, Moynhan, Murphy, Ochner, Sherring Read etc.

ÆTIOLOGY:—In England and Wales, 1 in every 700 suffers from appendicitis and 3000 die annually from the disease. Appendicitis is found equally in both the sexes. It is more common in spinsters than in married women. According to Dr. Kini, it is more common in men in India 80%. It is common between 10 and 30 years of age,

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the youngest case being a baby of six weeks and the oldest being a man of 92 years. It is commoner in urban than in rural areas, in well-to-do societies, than among the poor; it is thus a disease of civilisation. Vegetarians are relatively immune and non-vegetarians are more liable to an attack which is therefore, called a disease of dietary. 20·7% of Dr. Kini's cases were vegetarians and 3 out of 5 cases described here were also vegetarians. Among hospital admissions, 2·5% of surgical admissions suffer from appendicular troubles according to Dr. Kini. Members of the same family may suffer. For example 16 members out of 23 in three generations suffered from appendicitis.

Rendell Short writing on the incidence of appendicitis in India and Burma, states "It is rare among natives; Punjabis and Muslims are regular meat-eaters. No case was reported among hill tribes in Northern India by McCarrison during his practice of 9 years. When Indians take to European diet, they may become liable to the disease. In Burma, no case was reported by Williamson among the natives, though they ate meat. They take also large quantities of rice, peas, bread and vegetables". But it is not so rare as stated above; it is fairly common in India even among the vegetarians in the South.

Many theories have been advanced about its causation:—(1) Infections *e.g.*, dental caries, nasal sinusitis etc; (2) neuro-angio-spasmodic conditions; (3) mechanical causes; (4) food; (5) foreign bodies; (6) injuries; and (7) endocrines.

The proximate causes of an acute attack are:—(1) The attack comes on all of a sudden; (2) in a few cases infections like tonsillitis, influenza etc. have some influence; (3) injury is sometimes blamed for purposes of litigation! It cannot initiate an attack, but can aggravate a pre-existing one; (4) obstruction in the lumen of the appendix is a definite cause, *e.g.*, fæcoliths, strictures due to previous attacks, kinks, congenital bends, thread, whip, round-worms, orange pips and seeds, and foreign bodies like tooth-brush-bristles, (and in one case mercury ingested from crushing a thermometer six months previously). Sometimes sphincteric action may cause obstruction. It is said the valve of Gerlach has a sympathetic action on the pyloric valve. In pyloric spasm, there is a reflex spasm of the valve of Gerlach and appendix dyspepsia is a type of indigestion due primarily to disease of the appendix; and (5) in some cases, constipation and in many others amœbic dysentery.

The disease is more common in retrocæcal and pelvic varieties and also in mobile cæcum which causes a mild twist producing a subvolvulus condition which affects the appendix. There is no specific organism isolated from the appendix. The ultimate cause is the relatively inadequate quantity of cellulose in the diet. Apes in captivity also suffer from appendicitis.

Clinical features.—The classical picture of an acute appendicitis is sudden severe pain and colic starting at about 2 a.m. initially around the umbilicus without previous warning which later becomes localised in the right iliac fossa in 24 hours associated with nausea and vomiting. Slight fever 99°F. to 100°F., may be present. Localisation of rigidity and tenderness are features to be recognised to differentiate colics due to simple intestinal obstruction, wherein there is no rigidity between spasms. A colic which increases in intensity, associated with tenderness is usually a sign of obstructed appendix and must therefore, be viewed with grave danger. Colic and pain localise in the right iliac fossa within 24 hours. Vomiting may be present. Temperature is raised. Constipation is present in 25% of cases. There may be diarrhœa. Leukocytosis is present Hyperæsthesia is present in Sherring triangle which is diagnostically most important. Rectal examination may reveal tenderness in the rectovesical pouch, if the appendix occupies a pelvic position (60%). Localised tenderness may be absent in splenic retrocæcal appendicitis. But deep finger-point-tenderness may be present. Maximum tenderness is usually present at the McBurney's point.

Rovsing's sign in which pressure over the right iliac fossa causes acute pain in the left iliac fossa because gas is driven into the cæcum which causes pain in the appendicular region. There may be psoas spasm and pus cells in the urine. Sudden lifting of the hand after deep pressure often elicits sharp pain in appendicitis as well as in other inflammatory conditions of the abdomen. Another useful sign in retrocæcal appendicitis is elicited by placing the hands over the patient's pelvis, each index finger being placed on the anterior superior iliac spine. The thumbs are gently moved over the iliac fossæ when an area of tenderness may be discovered. The right hand acts as the control. Recently Dr. Leitch of Bambury wrote in the *B.M.J.* "A test for acute appendicitis consists in simply turning the patient on his side, grasping the right ankle and extending the right thigh. Pressure is then applied with the left hand over McBurney's point, to elicit tenderness. This clinical sign is of course, an elaboration of psoas test for retrocæcal appendix. I have found the test useful when in doubt about having diagnosed appendicitis; then the patient can be left for some hours or even overnight. If the test is at all positive, the appendix should be removed forthwith."

PATHOLOGY.—The appendix is a narrow tube varying in length and position guarded by a feeble valve and supplied with blood by a slender branch of the ileocolic artery and occasionally reinforced by another small branch. There is much lymphoid tissue in the submucous region which acts as a filter in inflammatory conditions and therefore it is called as the abdominal tonsil."

The pathological changes vary from a catarrh to gangrene and perforation and depend upon the type of infection and obstruction.

This obstructive pathology was brought to the notice of medical men by Wilkie, who made the important classification of (1) appendicitis without obstruction which usually goes through the normal process of repair; and (2) appendicitis with obstruction which resembles a closed loop intestinal obstruction and therefore, liable to early gangrene and perforation. There is some enlargement of glands in the meso-appendix.

During the primary attack, if the organisms are virulent and the patient is in a debilitated condition, or if a purgative has been given, the inflammation extends to the peritoneal surface giving rise to peritonitis. But there is usually time enough for the omentum, which is the policeman of the abdomen, and loops of ileum to form adhesions and localise the spread. And this combined mass is often called the *appendicular mass*'. If the appendix is twisted or kinked by adhesion, the contents cannot escape and rapid distention occurs. The further course of the disease is (1) gangrene and perforation flooding the peritoneal cavity with virulent infective material and ends in general peritonitis; and (2) an indefinite mass or swelling begins to form in the right iliac fossa due to localised peritonitis after 24 hours. Definite localisation becomes evident in 3 to 4 days when the pulse rate and temperature improve and the patient becomes more comfortable. In most cases, this mass gradually sinks and finally ends in a small lump which may also eventually disappear. The tongue becomes clean and moist, temperature normal, pulse improves and the leukocytosis subsides. In a few cases, this mass becomes distended and tense, leukocytosis increases, temperature swings indicating definite abscess formation. It may be adherent to the abdominal wall and point on the surface or it may break into the general peritoneal cavity. In pelvic appendicitis the abscess tracks down and may break into the rectum, vagina, bladder etc. In retrocolic appendicitis it may form an abscess in the lumbar region and resemble a perirenal abscess. This kind of localised peritonits is rare in children, pregnant women and in old or debilitated people.

TREATMENT :—The dictum of Murphy is "the earlier the operation, the lower the mortality." It is universally agreed that appendicectomy must be done within the first 48 hours of attack, the best results being obtained if the operation is done within 12 hours or atleast within 24 hours, after which the mortality rate rapidly rises.

After 48 hours of attack, the delayed type of treatment of Oschner and Sherring or the expectant treatment should be preferred in all cases where there is a localised peritonitis with a definite lump or mass in the right iliac fossa. This is a preparation for operation and not postponement. It must be carried out by the medical attendant himself on the threshold of the operating theatre. Quoting a case from Bailey "G.P., 11 years, undergoing

expectant treatment for appendicular abscess. The case appeared to be going on well. The size of the swelling is not decreasing. There was sudden collapse on the 5th day, and showed signs of general peritonitis. Within 15 minutes under gas and oxygen, drainage was instituted suprapubically and locally. The condition was critical for 7 days, but eventually improved. Appendix was removed after 6 months." The above case clearly demonstrates the limitations of the expectant treatment.

A careful history must be taken and the hour of attack must be noted. Physical signs must be recorded diagrammatically. Rigidity must be clearly marked and the size of the lump drawn as near to scale as possible. The periphery of the lump should be outlined every-day, on the skin of the patient and each day, the lump should be examined. Hyperæsthesis is also recorded. Rectal examination must be done atleast every third day and the results noted to see if the abscess has not invaded the pelvis. The pulse must be recorded every two hours and the temperature noted every 4 hours. Vomiting, if any, must also be recorded with its time, quantity and character.

Briefly the delayed method of the four Fs consists of :—Fowler's position, Fluids only, Fomentations and Four hourly chart.

The patient must be placed in the high Fowler's position, as it gives complete rest and gravitates any pus formed. No food is to be given by mouth. Only sips of water may be given. Five% glucose saline may be given by the rectum, subcutaneously or intravenously at the rate of 3 c.c. or 40 drops per minute, when the temperature is normal small feeds of Benger's food may be given, and then gradually increased. Local applications of radiant heat or warm stupes of glycerine mag sulph or warm poultices or local fomentations may be given. As regards drugs, an appendix pill used to be given formerly every two hours, which consisted of Calomel $^1/_8$ gr. Menthol $^1/_4$ gr. Ext. Bellad. $^1/_8$ gr., Ext. Hyoscyam. $^1/_8$ gr., Ext. Gentian Co q.s.

Antiperitonitic serum was also given 20 to 40 c.c.; it may be repeated. Considering the organisms that are involved in appendicitis, the sulpha group of drugs seem to have not much effect. But they must not be omitted. The decline in the mortality rate from 6·58% to 1·7% is due to intensive supportive therapy and chemotherapy. Everybody should know the limitation of chemotherapy. Antibiotics are ineffective in areas of inadequate circulation *e.g.* gangrenous areas and walled-off abscess. In uncomplicated cases, they should be used as adjuvants and not substitutes for surgery. Pencillin has some action. Streptomycin gives satisfactory results, because of E. coli. Aureomycin is considered to be the drug of choice. The organisms involved in this disease are E. coli, streptococcus fæcalis and Cl. welchii and aureomycin has got action on all these organisms. Two capsules are to be given

every 6 hours until the temperature comes down the normal and then for 2 days more. In very ill cases, aureomycin may be given intravenously. No morphia should be given at any time even after the diagnosis is made for it encourages the movements of intestines. Under morphia, the small intestines show increased muscular tone and enhanced frequency and amplitude of peristaltic waves. So also the case with the large intestines. No enemas should be given as they disturb the formation of adhesions. On the 4th or the 5th day a small glycerine enema may be given. No purgatives are to be given until the resolution is complete. Liquid paraffin 2 drams t.d.s. or at bed time may be given. By the above treatment, the resolution of the appendicular mass will be complete within a few weeks or months. The following should be watched which show nature's failure to combat the infection:—(1) A rising pulse rate even with a rise of 10 points in the first 24 hours, when operation is indicated. (2) Vomiting recurred. (3) Pain increased. (4) Diarrhœa or mucus in stools (pelvic abscess). (5) Extension of rigidity and tenderness. The above signs clearly show the spreading peritonitis when immediate operation must be undertaken. The operation at this stage is ligature at the base of the appendix, mopping up the local area inserting a drain and closing the abdomen. When the localisation progresses well, resolution sets in about 15 days. 10% of all cases do not localise and 90% of cases usually localise. 75% of cases end in complete resolution under expectant treatment. These cases should undergo appendicectomy after 3 months. They should not take purgatives. If there is constipation, only liquid paraffin is to be taken at bed time. The remaining 25% of cases with abscess formation require incision and drainage without searching for the appendix. A short oblique incision is made over the most salient part of the swelling and the muscles are divided in the same line, exposing the peritoneum. In incising the peritoneum, care is taken not to injure any viscus that may be adherent to it, nor to open into the general peritoneal cavity. After the abscess has been evacuated, a large bore rubber drainage tube is inserted. These cases are then treated as under expectant treatment. If the appendix is not removed, it should be removed after 3 months (internal appendix). The 10% of spreading cases should be operated. A simple basal ligature of appendix and excision is done and a suitable drainage of abdomen is instituted. Of these, 80% recovered and 20% end fatally. Some of these may show residual abscess requiring incision. A pelvic abscess should be drained through the rectum in males and through the posterior fornix in females. The old surgical maxim "where there is pus, you must let it out," can well be expected in the case of moderate sized appendicular abscess and they do well under delayed treatment. When the appendix is to be removed after 3 months, one finds the addition of a few dried up pieces of leathery substance stuck up in the appendicular region.

Complications are increased because :—(1) patients are admitted after 24 hours ; (2) more than one-third of cases take purgatives ; and (3) many take enemas or apply ice bags.

The indications that the abscess must be drained are :—(1) the lump is not getting smaller after the 5th day or getting bigger after this time ; (2) the lump is visible when the appendicular region is viewed tangentially ; (3) temperature is swinging above 100°F on several successive days ; (4) fluctuation is elicited ; and (5) pelvic abscess has formed.

Indications for appendicectomy are :—(1) within the first 48 hours of attack ; (2) children below 8 to 12 years of age ; (3) hyperæsthesia is still present ; (4) history of a strong purgative or compound enema having been administered during an attack ; (5) pregnant ladies—Cuthbert Lockeyr says "ignore pregnancy. Appendicitis is a serious lesion and as such should be treated on its merits." But in early pregnancy, any lower abdominal operation is liable to cause abortion and operation is better avoided, unless the attack is very severe ; (6) diagnosis is not certain whether it is a perforated duodenal ulcer or a perforated diverticulum ; and (7) after 48 hours, in the presence of increased pain and tenderness.

The mortality is 1% if operated before 12 hours of attack and is 11·18% if delayed for 36 hours.

Case Report (In brief)

Case 1.—Mrs. A., female, 20 years, Telaga-non-vegetarian of Vijayawada, history of colicky pain in abdomen—11 days before with vomiting and fever—1st attack Temp. 99·8°F., pulse 84. Respiration 20. Bowels moving, pain plus, tenderness plus, rigidity nil, mass 2"x2" present in the right iliac fossa —treated by fluids by mouth, Fowler's position ; Antiphlogistine—Elkosin tablets 2 t.d.s. and procaine penicillin 4 lakhs every day, after five days no pain, no tenderness and mass reduced and after three days, mass disappeared.

Case 2.—Mr. B., male, 45 years, dhobi, non-vegetarian, cultivator, Vijayawada Taluk. One year suffered from the same complaint for 10 days, pain and colic started at 11 a.m., took a purgative pill, but luckily vomited, pain started around umbilicus colicky in nature settled down to the right iliac fossa in the evening on examination on the 6th day, mass 3"x3" in the right iliac fossa, pain and tenderness present, rectal examination nil, tongue coated, temp. 99°F., treated with Penicillin Elkosin tablets. Sips of water by mouth and antiphlogistine locally. Within 2 weeks the mass disappeared.

Case 3.—Mrs. C., female, 50 years, Brahmin, widow, vegetarian had an attack of indigestion at Secunderabad. On the 3rd day, took a dose of castor oil which purged her well, came to Vijayawada on the 4th day with pain and tenderness in the abdomen and diarrhœa. She was seen on the 11th day and there was an appendicular mass

2"x2" pain and tenderness was present. Temp. 99·5°F., treated by doctor relation for a week, did not improve probably due to incomplete rest etc. She was again examined by me after a week. Appendicular mass 2 to 3 times bigger than before treated with absolute rest, fomentations, fluid diet etc., the size of the mass came down to ½" x ½" in two months; advised operation after three months left for Secunderabad.

CASE 4.–Mr. D., male, 48 years, vegetarian, Brahmin, Vijayawada, history of a typical attack of appendicitis one evening with pain tenderness and vomiting examined on the 4th day, all signs present with a lump 2½" x 2½" in the right iliac fossa with temperature first attack treated with absolute rest local antiphlogistine, Cibazol tablets and procaine penicillin and fluids by mouth. Mass quickly disappeared within 10 days.

CASE 5.—Mr. E., male, 25 years, Brahmin, vegetarian, Vijayawada Taluk, attack of acute appendicitis one evening, examined within 6 hours of attack, advised operation, but refused, mass 1" x 1" in the right iliac fossa on the 4th day. Expectant treatment resulted in complete resolution within one week.

References:

1. Kini, M. G, *et al*—Jour. Ind Med. Assoc., October, Nov, and Dec. 1950.
2. Capt. Mangeawara Rao—Antiseptic, Oct. 1939.
3. Kalipadas—Jour. Ind. Med. Assoc., Oct. 1950.
4. Reddy—Antiseptic, Dec. 1950.
5. Rai Kini—Antiseptic, Sept. '50.
6. Rose and Carless—Manual of Surgery.
7. Bailey Hamilton—Emergency Surgery.
8. Bailey and Love—A Short Practice of Surgery.
9. Turner Grey—Modern Operative Surgery.
10. Jemieson, A.—A Text Book of Surgical Treatment, Edited by Illingworth.
11. McGregor—A Synopsis of Surgical Anatomy.
12. Miles and Wilkie—Operative Surgery.
13. Majumdar—Modern Pharmacology and Therapeutic Guide.
14. Darling—Surgical Nursing and After-treatment.
15. Short, Rendle—Causation of Appendicitis.
16. Kutumba Rao B. V. R.—Antiseptic, Mar. 1950.

Primary Carcinoma of the Vagina

It is a curious fact that carcinoma of the vagina is less common than any other part of the female genital tract. Messelt of Oslo in Norway (*Surg. Gynaecol. Obst.*, July 1952) reports upon the results of 78 patients treated in the Norwegian Radium Hospital for primary vaginal carcinoma during 1932—1945. There were 73 cases of squamous cells and 5 cases of adenocarcinoma. The average age was 56 years, with the majority of patients in the age-group between 50 and 65 years. The ratio of married to unmarried women having primary vaginal cancer 3·9 : 1. The commonest forms of treatment were radium therapy and X-ray therapy. There was a five year cure rate of 22·7 per cent.—(*Med. Press*, 29-12-'52).

ALLERGIC DISORDERS*

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"ALLERGY is a constitutional or systemic phenomenon, predominantly functional, only secondarily organic which may occur in any individual suffering from any other specific malady and not infrequently colours the picture of the disease."—Vaughan and Black.

Allergy denotes peculiar reactions. One to ten per cent of human beings are allergic. Allergy is a clinical concept; is inherited from parents; and is against various substances (bacterial and non-bacterial). Its duration in the young is long. The allergic reaction (first or repeated) is due to allergins of unknown immunological nature provoked by allergens (protein or non-protein). A sensitizing dose and time interval are not always essential. The sensitivity is highly developed in some tissues and entirely absent in others. The reactions are mainly in the skin, and in the respiratory and gastro-intestinal tissues. Non-bacterial allergy manifests as vagus syndrome and bacterial allergy manifests itself in the sympathetic system associated with destruction and formation of new tissues.

The symptoms of allergy can be explained by smooth muscle spasm and increased capillary permeability. The allergic inflammation is exemplified in the respiratory tissue. Eosinophilia is present in the blood and tissues. "The psychological factor in allergy is one of non-specific catalysing factors." (Bray).

The case sheet of an allergic baby is a speciality and includes special attention to heredity, influence of external factors, foods, previous illnesses (measles, bronchopneumonia), other allergic conditions radiology of bone ends, chest and sinuses, gastric analysis, and skin reactions, and a thorough blood examination (Wassermann reaction and for eosinophilia.)

The chief characteristics of allergic disorders are:—(1) periodicity; (2) positive personal or family history; (3) specific reactions; (4) eosinophilia; (5) hypochlorhydria; and (6) response to adrenaline, ephedrine, aminophylline and anti-histamine preparations (Anthisan or antistine or pyribenzamine).

Children with asthma, eczema, nasal allergy, migraine, and urticaria are all attended to at the outpatient department and this is reflected in the statistical data regarding the series of 843 cases exhibited under the heading panoramic view of pædiatric practice. Food allergy is also easily managed; scorpion sting with the dreaded allergic pulmonary œdema and heart failure is always noted and such a patient is admitted.

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* Specially contributed to THE ANTISEPTIC

Individual manifestations of allergy.—*Asthma*:—Attacks of paroxysmal dyspnœa, principally due to spasm of bronchial muscles and oversecretion of mucus. The age incidence, sex incidence, hereditary predisposition and an expressly assigned cause of onset (pertussis, measles, pneumonia, influenza, severe bronchitis) are all well-known. The types of asthmatic attack in childhood differ from those in adult life.

Types of asthma in childhood.—1. *Acute bronchitic type in infancy;* resembles a mild pneumonia; fever, sneezing, dyspnœa, cough, and cyanosis may all be present. Expiration is prolonged with sonorous and sibilant rales. In breast-fed babies spasm occurs when the mother has taken fish, prawns, tomatoes, onion-curry, mangoes, cashew (anacardium) fruit, jack fruit, oranges, fried curries, and preparations made in hydrogenated pea-nut oil.

2. *The hereditary type*:—The child might have had eczema earlier, Typical spasm. Hereditary factor is present. A male child came to the children's clinic at the Government Royapettah Hospital, with severe infantile eczema at 1 year. Father is an asthmatic. Parents are first cousins. Eczema cleared on treatment but in six months the little child came up again to the clinic with typical allergic asthma.

3. *Eczema-asthma-prurigo syndrome*:—This is a variant of the former, predominating in males. I know of a family of a father with psoriasis, 2 sons (psoriasis), and 2 daughters (asthmatic). There are persistent skin rashes in the flexures in one daughter who has also regular spasms of asthma. I have observed children having eczema, later developing cirrhosis of liver, and when the cirrhosis of liver is arrested, developing asthma almost as an exchange process. Allergic history is positive in such cases.

4. *The lung damage type*:–Bronchitis with superimposed spasm present appearing in older children, may be recurrent bronchitis. Many children convalescing from pertussis, measles, and broncho-pneumonia, develop persistent bronchitis and never seem to get rid of the same.

5. *Coryzal asthma*:—True seasonal asthma is due to pollens, odours and emanations.

PATHOLOGY:—Sudden death might occur in an asthmatic spasm (vagal inhibition, sudden failure of myocardium, or asphyxia due to mechanical obstruction of the bronchi by viscid secretions).

An attack of asthma is explained as due to: (1) spasm of bronchial muscles; (2) œdema of the lining membrane of the walls; and (3) obstruction of the bronchial lumen by exudate.

Thickening and hyalinisation of the basement membrane of bronchi, hypertrophy of the bronchial musculature, eosinophilia of the tissues, sacculation of the epithelial layer of the bronchi,

bronchial stenosis, hypertrophy and metaplasia of the epithelium constitute the local pathology. Emphysema is the late result.

Asthmatic sputum is thick and viscid in the absence of secondary infection, with which it becomes thin and muco-purulent. Charcot-Leyden crystals, Laennec's pearls, Curschmann's spirals are known to be present. The bacteriology of the sputum reveals generally streptococci, M. catarrhalis, pneumococci and staphylococci. Stools tend to be on the acid side.

FIG. 1.
Asthmatic twins.

FIG. 2.
Asthmatic after recovering from cirrhosis liver.
(Note marking of enlarged liver).

X-rays chest: —Generally marked hilar shadows and peribronchial fibrosis are seen and emphysematous change in chronic and longstanding sufferers.

Complications in asthma are allergic (urticaria, eczema, hay fever and migraine) and non-allergic (over-distention of the lungs, chronic bronchitis, atelectasis, subcutaneous emphysema, lowering of vital capacity). Thoracic deformities are kyphosis of the upper spine, increase in the A-P diameter of the chest, pigeon-breast, and elevation of the clavicles.

Cardiovascular changes are rather few and occur as very late results. Right-sided heart failure is the rule in chronic emphysematous cases.

DIAGNOSIS:—During the attack diagnosis is easy; but in the intervals, it may be difficult.

Differential diagnosis lies in separating it from laryngeal, tracheal and bronchial, and pulmonary conditions; cardiovascular conditions like heart failure, paroxysmal auricular flutter or fibrillation; renal causes; and nervous manifestations like functional air-hunger, hysteric polypnœa, respiratory syndrome following encephalitis. A blood and sputum eosinophilia is pathognomonic of bronchial asthma, pulmonary distomiasis, hydatid disease and eosinophilic lung.

PROGNOSIS :—Longevity is good. I do not agree with Bray who says that rheumatic fever is rare in asthmatics. Male children may clear up at puberty. Status asthmaticus occurs with age. Early treatment is beneficial in allergics. "Shorter attacks with less of pulmonary damage carry better prognosis. The detection of a definite exciting cause improves the prognosis." Increasing complications and lung damage are adverse factors. Unsuccessful surgery and poor therapeutic response are obviously unhelpful.

TREATMENT :—Treatment of an attack : adrenalin 1 to 5 minims of 1 in 1000 solution subcutaneously or neocupinine (B.W. & Co) sublingually given early enough in an attack is useful, but I prefer intravenous or intramuscular aminophylline. Bronchitic element is benefited by penicillin inhalation, but is beset with the danger of promoting the growth of fungi in the lungs. For inducing sleep, phenobarbitonum gr. $^1/_8$ to gr. $\frac{1}{4}$ or Belladenal $^1/_8$ to $\frac{1}{4}$ tablet is given at bed time. Lumbar puncture may be needed.

An enema or gentle purgative, light diet (rice and pepper water is ideal) and a mixture of iodides and stramonium (older children) are needed. Antihistaminics are useful for a few but they themselves seem to upset a few sensitive children.

Treatment between attacks lies in :—(1) Avoidance and removal of the specific cause ; (2) desensitisation (specific and non-specific) ; (3) general hygiene. Diet (avoidance of fried and fatty preparations, citrus fruit, milk, and exciting agents). Reflex irritation ; focal sepsis ; (4) thyroid, if B.M.R. is low ; (5) psychopathic states ; (6) drugs, surgical aids ; (7) physical therapy ; and (8) remedial exercise.

If F.T.M. reveals low acidity, acid and pepsin mixture is given Iodides and belladonna, vaccine therapy, and nicotinic acid are useful, the last one benefits also the mental state. An extract of liquorice (containing all active principles) with ammonium chloride given orally is a valuable recipe for those not agreeing with iodides, belladonna, ephedrine etc.

Eosinophilic lung :—This condition is characterised by vague or marked symptoms resembling pulmonary tuberculosis. X-rays of the chest reveal diffuse mottling of lung fields, and blood films show marked eosinophilia. Is the condition due to mites ? or allergy ? Response to arsenic is good but is sometimes dangerous because of consequent encephalopathy or jaundice or dermatitis. Daily intramuscular emetine injections are equally effective.

Nasal allergy :—This condition which is more common in girls is characterised by paroxysmal attacks of sneezing and running of a watery discharge from the nose with partial or complete blockage and loss of the sense of smell ; it tends to recur all round the year. This is a condition related to asthma.

Dust, climate, foods, bacteria, endocrine causes (hypothyroidism) and aspirin are offenders. Best examples of these are persons with rhinorrhœa in market places, dusty occupations, cooks, and sewer workers. Diagnosis is from recurrent colds, sinus infections, cerebrospinal rhinorrhœa, syphilis, and intranasal abnormalities.

Eczema in infants:—Neurodermatitis—contact dermatitis—Eczema and urticaria are common in patients with hay fever or asthma, and their family members (Cooke and Vander Veer); and infantile eczema is due frequently to food sensitisation. *Dermal allergy* is characterised by: (1) itching; (2) paroxysmal nature, with typical localisations; and (3) appearance at allergic age period (first decade). The specific sensitising substances are variable; first foods and later inhalants.

Eczema:—Eczema is an inflammation of the skin in which the epidermis is predominantly involved, with clusters of tiny vesicles, and epidermal spongiosis. The hyperæmic stage, the exudative stage, and the desquamative stage appear on the scene while sensitivity resides in the epidermis. The course is acute, subacute or chronic with exacerbations and the lesions are distributed characteristically with itching, burning and tingling. Male children suffer more. Face, head, trunk and extremities are affected. Heredity is marked. In the etiology of eczema, teething, focal infection, endocrine disturbances, metabolic alteration, dietary factors (fats, peanut oil) and protein sensitisation, one or more of these may be operative. Diagnosis is by skin testing and elimination diet. MacLeod and Meunde adduce antigen-antibody reaction in the epidermis, in the eczematous reaction.

Infantile eczema has to be differentiated from impetigo contagiosa, seborrheic dermatitis, congenital syphilitic skin lesions, intertrigo, sweat or napkin rashes, scabies (wherein allergy has a role). Sudden death has occurred in a few patients. Natural cure is common by the end of the second year. Sometimes flexural eczema is persistent and asthma may supervene in many children later on. This is eczema-prurigo-asthma syndrome. Such children are liable to diarrhœa, cirrhosis of liver and bronchitis. Treatment is induction of restful sleep, soothing lotions and desensitisation and use of antihistaminic drugs.

Pruritus:—This is shown to be hypersensitisation to foods (wheat, Bengal-gram, sesame or peanut oil or its hydrogenated products, fish, prawns, tomatoes, onions, watermelon, jack, mango and anacardium fruits).

Contact dermatitis:—External irritants (occupational) cause this. Plant, pollen, perfume and medicament (penicillin, streptomycin) dermatitis are common experiences.

Urticaria:—Urticaria is an œdematous condition of the skin, characterised by the formation of wheals and accompanied by itching and stinging. Papular urticaria of infants and angioneurotic œdema are familiar. Normal and allergic children are victims. The rash, commoner on the trunk than on the face, affects only the superficial layers of the skin. The mucous membranes of the mouths, larynx, pharynx, and alimentary canal (colic) are also occasionally involved. Pruritus is present, as also flatulence and constipation. Acute and chronic cases are recognised. In the urticarial wheal is visible the triple response of Lewis. Causes are light, heat, cold, trauma, animal factors (insects, bugs, pediculi or leeches, stings by bees etc. the hair of caterpillars, woollen clothing, animal contacts) and vegetable agents. Ingestant factors are also to blame (grapes, mangoes, jackfruit, watermelon, drugs and parasites like the roundworm and ankylostomes). Injected materials (arsenic, bismuth, insulin, liver extract, procaine, penicillin, streptomycin) are noteworthy. Endocrine dysfunction (puberty, menses,) and psychological states, (anxiety, fear and anger) are responsible in some susceptibles.

The treatment of an acute attack is successful with adrenaline, ephedrine, and antihistaminics. Lotio calminae for the skin, a gentle purge, and vitamins C, K and nicotinic acid are advised. Auto-hæmo or sero-therapy is indicated in refractory cases. Antihistaminics used along with sera generally prevent serum rash, particularly when treating tetanus or diphtheria. Angioneurotic œdema involves subcutaneous tissues and is tackled as above.

Papular urticaria is common in children and ceases at puberty. This is an allergic condition depending on fats, and common foods like fish, egg, potato, oats, chocolate and has to be differentiated from varicella, scabies, Hebra's prurigo, insect bites, sweat rashes, lichen planus, papular eczema, and papular erythema multiforme. Treatment lies in the adjustment of diet and the use of lotio calaminæ and internally calcium, vitamin C and antihistaminics.

Allergic purpura:—This is due to changes in the blood capillaries and is characterised by skin lesions, gastro-intestinal crises, painful and swollen joints, and hæmorrhages. Dietary agents and drugs are exciting factors. Vitamins C, K, and Calcium are really more useful.

Erythema multiforme (allergy to diet or streptococci) and *Erythema nodosum* (streptococcal or tubercular allergy or rheumatic indication) are also conditions demanding detailed study. Dermatitis herpetiformis and acne vulgaris are sometimes allergic in nature. Psoriasis has also allergic basis.

Migraine:—The allergic basis of migraine is supported by periodicity, marked heredity, and its association or alternation with other allergic manifestations.

Cyclic vomiting is exchanged for migraine in later childhood and migraine for epilepsy. I observed for a period of five years, a boy with epilepsy. He got bouts of vomiting especially when diet was rich in sweets. Vomiting varied with fits. X-ray skull: *nil* particular. Blood sugar normal (thus insular hyperactivity ruled out). Blood:—Kahn and Wassermann: negative. A girl subject to fits in infancy suffered from migraine subsequently and after puberty developed active rheumatic mitral disease and ultimately died of heart failure.

Associated with migraine, cyclic vomiting, asthma, and epilepsy, is a condition which has been elaborated under the heading of cyclic diarrhœa. This last is notorious in paving the way for hepatic cirrhosis.

Allergic headaches are generally due to food allergy. Whether epilepsy has an allergic basis or not is debated. Serous meningitis (Quincke), functional paralysis, Meniere's syndrome, disturbances of sleep, are all described as having an allergic basis.

Food allergy:—Reactions arising from the ingestion of wholesome and normally well-tolerated foods. The "Fortunate" food allergics are sensitive to fish, prawns, cucumber, water-melon, strawberries, tomato, onion, and cabbage; and the "unfortunate" major group of allergics always seek treatment. The major group is generally sensitive to common foods: wheat, milk, bean, egg, potato, mango, jackfruit, citrus fruits, gingelly oil, peanut oil etc. The symptoms are contact reactions (gastro-intestinal) or general reactions (nasal, neuro-psychiatric, cutaneous, and genito urinary). Oil baths produce asthmatic spasms in some and in some others fever and joint pains. Skin reactions, elimination diets, and leucopenic index are helpful in diagnosis.

Treatment consists in avoiding exciting agents. Specific desensitisation, non-specific desensitisation and symptomatic relief with adrenaline, ephedrine, and antihistaminics are to be remembered.

Hepatic cirrhosis:—I have a very strong argument to show that an allergic diathesis is present in children developing hepatic cirrhosis.

Bacterial allergy:—Allergy in nephritis, rheumatic diseases, rheumatoid arthritis, scarlet fever, and tuberculosis is always a discussed topic in the heights of pathological lore. I believe that in whooping cough, a definite bacterial allergy plays a decisive part in the symptomatology of hæmoptysis and bronchopneumonia.

Physical allergy:—Asthma, coryza, urticaria, are brought about solely by such physical agents as cold, heat, light or mechanical irritation, which act through the skin or mucous membranes. Reaction may be contact reaction or general. Hypersensitivity to

light includes urticaria solaris, hydroa æstivale (hydroa vacciniforme, summer prurigo).

Drug allergy :—Aspirin, sulpha-drugs, quinine, copaiba, iodides, turpentine, argyrol, mercurochrome and arsenic are known to cause reactions. Penicillin and streptomycin are known to produce allergic reactions. Purpura follows the use of sedormid, nirvanol, luminal or quinine. Insulin, thyroid. pituitary, ovarian hormone, aneurin, liver extract, are also bad offenders. Agranulocytosis has resulted from the use of pyramidon, thiouracil, sulpha-drugs and certain others. A patient after taking advertised tablets for a purgative, developed acute gastro-enteritis; this was probably due to phenolphthalein, which in a few others produced rashes like psoriasis. Paludrine produces in susceptible individuals gastro-enteritis, epistaxis, hæmatemesis, and hæmaturia.

Serum disease, fatal reactions, and artificial sensitisation :—A second dose of serum following a first dose after 10 or 14 days' interval (or a primary dose in a sensitive subject) may produce fatal results. Large and frequent doses of serum may produce serum disease in non-allergic. Reactions occur commonly with equine serum. Serum disease has fever, vomiting, eruption, joint pains tenderness œdema, lymph-node enlargement and sometimes neurological complications. Treatment consists in the use of adrenaline, ephedrine and aspirin. Antihistaminic save the patients sometimes astonishingly. Fatal accidents in serum therapy are prevented by quick desensitisation or by the prophylactic use of adrenaline or better still antihistaminic drugs like Anthisan (M & B) or antistine (Ciba) and pyribenzamine (Ciba.)

The allergic joint, spring catarrh of eye, parotid swellings, enuresis, testicular swellings, and conjutivitis after eating wheat or fried preparations containing onions or hydrogenated oils are known to be allergic in nature.

Hypersensitiveness to insects, parasites, moulds and fungi :—Stings of bees and wasps; bites of the mosquitoes, fleas, bed-bugs and sand-flies; insect emanations: ascariasis: ankylostomiasis: hydatid disease: bilharziasis: oxyuriasis: malaria: A patient with chronic malaria had asthmatic paroxysms corresponding to the malarial paroxysms. Moulds, fungi and yeast can also excite reactions.

Scorpion bite :—I have seen fatal reactions (allergic) to scorpion bites. Prevention is by use of anti-scorpion serum prepared by the King Institute, Guindy, Madras. The victims are generally children (while adults are not exempt) and when the reaction has set in, treatment is generally of no avail. Treatment for the reaction is as for shock and allergy. Elevation of the foot-end of bed, warmth, regular use of stimulants like nikethamide, atropine sulphate to minimise pulmonary œdema, saline infusions. Intravenous calcium

gluconate is advised. Death appears to be due to pulmonary œdema and heart-failure. Early warning lies in cold extremities, rapid heart, hyperpnœa, and restlessness.

References

1. Vaughan, W.T. and Black, J.H.—Practice of Allergy, II Edition, 1948.
2. Bray, G.W.—Recent Advances in Allergy, III Edition, 1937.
3. Roxburgh, A. C.—Common Skin Diseases, VIII Edition, 1947.
4. Hadfield, G. and Garrod, L.P.—Recent Advances in Pathology, V Edition, 1948.
5. Sarma, A. V. S.—Mental Symptoms in Cirrhosis of Liver, Asthma, Coeliac Disease, and Chronic Urticaria, The "Antiseptic", August 1948.
6. Sarma, A. V.S.—Allergic Disorders, The "Antiseptic", October 1949.

Cardiac Emergencies: Myocardial Infarction

Acute myocardial infarction has become more and more common and is an emergency of great seriousness. Treatment consists essentially in the use first of morphine to relieve pain in doses of 1/4 to 1/2 grain; when pain is severe morphine *intravenously* in doses of 1/8 to 1/4 grain may be particularly effective. Atropine should also be used 1/100 or 1/150 grain. Oxygen therapy is also important. The best means of delivering oxygen is by positive pressure using 5 cm. of water to begin with and gradually reducing this to 1 cm. If a mask is not available or when the patient is uncomfortable in a mask, the oxygen tent must be used. Antifoaming agents have no place unless the patient goes into heart-failure. Papaverine may be given intravenously in doses up to 2 grains if the patient is not in shock and that may help to relieve the pain. Aminophyllin grains 7½ intravenously is also recommended; but it increases the work of the heart and has been blamed for some deaths. If used, it should be well diluted and administered in 200 cc. of 5 per cent glucose by the drip method. The use of 50 per cent glucose is *not* recommended.

If shock accompanies myocardial infarction, certain additional measures may be necessary. Some have recommended sympathomimetic drugs to raise the B.P., such as ephedrine, epinephrine and/or neosynephrine. There is however, a great deal of controversy about these preparations, as their side-effects may lead to a fatal termination. Whole blood or plasma intravenously or intra-arterially has also been recommended. The experience of the author and his colleagues in Newark has not yielded gratifying results. Nevertheless when a patient with myocardial infarction goes into shock, the use of plasma or whole blood may be life-saving. Quinidine prophylaxis has been advocated by some workers, for preventing the development of arrhythmias. It is best to use this drug only when required. Digitalization should be utilised in cases of left heart failure but the minimum lethal dose is reduced to one half in the presence of myocardial infarction.—(Bernstein A., *Jour. Med. Soc. N. J.*, 49: 7, pp. 301–302, July 1952).

PRELIMINARY OBSERVATIONS ON PINK DISEASE

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THERE are a few children having a picture of Pink Disease as observed in the hospitals outside India. The symptomatology is best appreciated in a baby with a fair complexion and when the condition is also fairly typically developed.

That Pink disease (erythroderma polyneuritica) is not incident in India has been the impression of some writers but this appears to be unjustifiable.

The following children who came under my care exhibited symptomatology agreeing with the descriptions in vogue of Pink disease. And again, if the ætiology lies in malnutrition or allergy or intoxication with mercury, how could it be otherwise than global in distribution, except perhaps for the climatic modifications or minor pigmentary differences so far as the visible dermal manifestations are concerned ? This subject certainly merits attention on account of the views recently put forward to explain the pathogenesis of the disease.

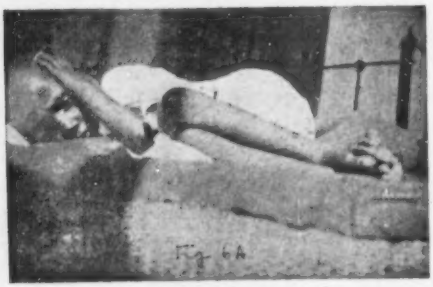
Pink disease, first described by Swift in Australia, is now a problem. Is it an unknown infection or deficiency disease or a variety of the adaptation syndrome ? The disease occurs generally between 4 months and 4 years. Peripheral neuritis and lymphocytic infiltration of the cord have been post-mortem findings.

The child has a coryza, feels miserable and restless with photophobia and with pink swollen limbs, nose, and ears and with a cold perspiring skin. Scales and trophic lesions like whitlows and stomatitis with shedding of the teeth are common. Hypotonia with diminished tendon jerks and tachycardia with raised blood pressure are common. Diagnosis is easy. Trowell stresses on the combined therapeutic utility of marmite and liver in pellagra while either may be relevant in Pink disease. Treatment includes rest, nursing, liver broths, vitamins of the B group like yeast preparations, and sedation including a soothing application to the skin like Lotio Calaminæ.

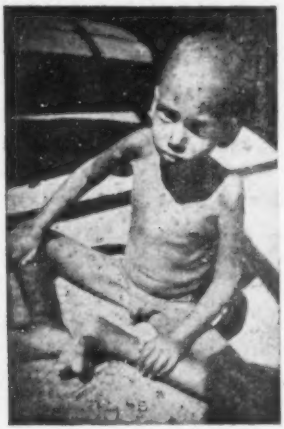
The cases reported below in this communication deserve the diagnosis of Pink disease.

CASE 1.—P., a boy of 4 years from a non-vegetarian family, admitted on 6-11-'40 into the Government Stanley Hospital, Madras for dropsy of 1 month's duration. Discharged on 21-12-'40 with probably a terminal gastroenteritis. The father and mother were victims of migraine and asthma respectively. The previous

history of the child is interesting in that he was breast-fed till about the end of the third year. The dietetic supplements were rice, pepper water, *iddli*, *dosai*, *appam* and eggs; the last one being the only source of quality protein. The child had diarrhœa, one month prior to admission.



CASE 1.
Pink disease. (Shunning light).



CASE 1.
Pink disease. (A miserable baby).

CASE 1.
Pink disease. (Biopsy of skin. Low power).

CASE 1.
Pink disease. (Biopsy of skin. High power).

On examination the child looked miserable, shunned light, and lay in bed in a flexed condition. Walked on a broad base

when compelled to walk. Conjunctivitis and stomatitis were present. Extremities cold and swollen, but did *not* pit on pressure. Skin scaling. Liver and spleen not palpable below the ribs. Heart sounds rapid and feeble. Lungs showed slight diffuse congestion. Cranial nerves not impaired. Abdominal and cremasteric reflexes brisk on either side. Plantar reflexes flexor; tendon jerks extremely feeble. Sensation to pin pricks not impaired. Romberg's sign not present.

Investigations.—*Urine*:—No sugar or albumin or hæmatoporphyrin. Motion: loose and foul; mucus present; no worms or ova; no blood or cellular exudate. Blood:—No abnormal cells or parasites. No microfilariæ in the blood. Red cells: 25-11-'40: 6·2 millions per cmm. Hæmoglobin 100%; Colour index 0·8; White cells 13,600 per cmm. Differentially; P. 72%; L. 17·8%; M. 5%; E. 6%; Masts 0%. 6-12-40: Reds 4·7 millions per cmm. Hb. 75%, C.I. 0·8; Whites 24,900 per cmm.; P. 86%; L. 11·5%; Mon. 2·5%; E. and M. 0%. Serum proteins: Albumin 1·795%; Globulin; 1·900%; and total proteins 20 mg. Cerebrospinal fluid:—4 cells per cmm. Total proteins 20 mgs %. Sugar 52·7%.

Biopsy of skin:—Showed a papillary fibromatous, polypoid condition of the dermis. The surface was corrugated, the epithelium was thin and stretched and the inter-papillary plugs flattened out. The superficial layers keratinised and scaly. Pigment in the basal layers increased. The underlying fibrous tissue was finely fibrillated and very vascular. No evidence of inflammatory infiltration.

The diagnosis of Pink disease in this case is based on the following:—(1) The flexed attitude of the child in bed with photophobia, cold, swollen, and flaccid limbs; scaling skin; and a picture of extreme misery. (2) Infantile paralysis and tuberculous meningitis are eliminated by the afebrile condition of the patient and the chemistry of C.S.F. (3) The poor response to a balanced diet and drug treatment rule out nutritional œdema and deficiency conditions like polyneuritis, and pellagra. Calcium, yeast, and nicotinic acid were given orally, and vitamin B_1 and liver extract were given by intramuscular injection with no benefit. The child steadily lost weight and was going downhill.

The points against the diagnosis of Pink disease are the low serum proteins and the lack of pinkness in the extremities which appears before the scaling starts. The late stage at which the case was seen might be a reason for not appreciating the pinkness of the extremities in this case. Further, the pink colour which is obvious only in fair complexioned children and which is followed by scaling may pass altogether unnoticed and unidentified in dark-skinned children. The low values for serum proteins cannot be a bar to

the diagnosis of Pink disease as some authorities hold that the disease may be caused by dietary deficiencies.

CASE 2.
Pink disease. (Trophic ulcer on right foot).

CASE 2.—C. V., male, 3 years old. Admitted into the Government Royapettah Hospital, Madras on 14-3-'49 and discharged on 3-4-'49. Complaint: diarrhœa for 10 days. Previous history: fed on barley water for 10 days prior to admission and with rice diet before that.

Family history:—Patient was the fifth child. No abortions in the mother.

Present illness:—Had fever and photophobia 4 days prior to admission, but œdema of feet was of 10 days' duration. Bullæ reported on feet.

Mother's blood: negative to Kahn and Wassermann tests; Patient's motion: round worm ova seen. Clinical: ill-nourished child; œdema of the lower extremities present with pinkish colour; tongue: clean. Abdomen: doughy; liver and spleen not palpable. Heart: sounds clear and rapid. Lungs: breath sounds harsh with rhonchi. Voice: hoarse. 16-3-'49:—Burning and pain in lower extremities complained by patient. 20-3-'49:—An ulcer developed on dorsum of right foot. 22-3-'49:—Persistent tachycardia present persisting also during sleep. Tendon jerks absent in all the limbs; cremasteric reflexes present. Lungs: bronchitis present.

TREATMENT:—Calamine lotion to the feet and cod liver oil dressing for the ulcer on foot. Internally, liberal diet with milk and eggs. Orally yeast. Liver extract and B complex given by injection. For a febrile bout of 4 days with respiratory symptoms penicillin was given. Discharged with pinkness of extremities subsiding and with all round improvement.

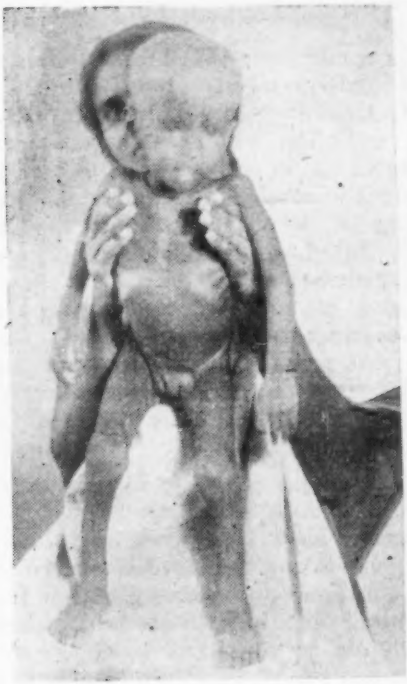
CASE 3.—A female child (G) admitted on 19-8-'42 for œdema of hands and feet of 14 days' duration; and discharged cured on 28-9-'42.

Family history:—Patient was the first child. No abortions in the mother.

Previous illness etc:–Mother's pregnancy complicated by toxæmia. Labour normal. Breast fed by mother till date of admission; also fed with "*dosai*", "*iddli*", and "*appam*". No animal protein in diet.

Clinical:—Ill-nourished and anæmic with œdema of the extremities. Eyelids not swollen. Abdomen: doughy. No ascites. Liver and spleen not enlarged. Heart: mitral first sound soft. Pulmonary systolic murmur heard. Pulse: 80 per minute while recumbent and

100 per minute while sitting up. Lungs: nil particular. Nervous system: child is dull. Abdominal reflexes present, also plantars flexor. Tendon jerks absent. Hands and feet feel cold. Photophobia and hypotonia and tachycardia markedly present. Vaginitis present.



Case 3.
(Clinical Photograph).

The complexion of the child was dark, and the palms of the hands and soles of the feet were red with skin slightly depigmented in areas. 5-9-'42: Oedema decreased. Pulse rate slower than before.

Investigations: Blood — Wassermann negative. (29-8-'42):-Reds: 2·5 millions. Hb: 45%. Whites 13,400. C.I. 0·9; Serum proteins; Albumin 2·863% and globulin 3·779 %. C.S.F. proteins 35 mgms %; chlorides 680 mgms %; sugar 56 mgms%. Blood differential count:— P. 64%; L 31%; M 3·5%; E 1·5%. (27-8-'42). Blood (4-9-'42): Reds 2·7 millions; whites 18,800; Hb. 50%. C.I. 0·9; X-rays of bones: rarefaction present.

The cases reported improved to some extent on rest, diet with quality protein, and parenteral use of vitamin B complex and liver extract. Recently salt and desoxycorticosterone acetate are said to be beneficial and to yield quicker results.

I consider that in the development of the clinical picture of Pink disease, a constitutional predisposition or malnutrition leading to hypoadrenal fuuction renders the child vunerable to peculiar or allergic reactions, and any infection like a sore throat or an intoxication like mercury therapy may build the characteristic symptomatology.

References:

1. Sheldon, Wilfrid—Diseases of Infancy and Childhood, (1946).
2. Sarma, A. V. S.—Pink Disease, Indian Medical Journal, Vol. 36: 1, January 1942.
3. Trowell, H. C.—Pellagra in African Children, Archives of Diseases in Childhood, August 1937.
4. Poncher, H. G.—Year Book of Paediatrics, 1950.
5. The Medical Annual, 1951.

TREATMENT OF CHRONIC MALARIA WITH REPORT ON A CASE

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AETIOLOGY.—Chronic malaria comprises :-(1) Chronic relapsing malaria, simply cases of malaria inadequately treated ; (2) persons who are subjected to repeated infections for years include; (*a*) those who are infected periodically ; (*b*) and those who are infected perennially. In the latter group are cases: (i) in which parasites will be found in the peripheral blood but the hosts have slightly enlarged spleen, and are slightly anæmic ; (ii) where hosts suffer periodic attacks of fever, are weak, debilitated, and anæmic, and have enlarged spleens. (3) Chronic malarial cachexia : the patient has a huge spleen and liver, œdema and often ascites and very severe anæmia, has an earthy complexion and often some jaundice with low fever. Often parasites are not present and the patient does not respond to anti-malarial treatment. The diet of Bengali patients with a low protein and a poor vitamin content is one of the contributary factors in malarial cachexia.

DIAGNOSIS :—(1) A history of rigors on alternate days or every 72 hours is often obtainable. Even when the temperature chart is not of the classical type and rigors are absent, malaria must not be excluded ; (2) Spleen—rapid enlargement and the increase and recession during the febrile attack and intermission are suggestive features. The spleen is slightly tender and firm. In chronic malaria the spleen becomes firmer and assumes a wood-like hardness and it is not tender.

Examination of peripheral blood—(1) by thin film ; (2) thick film ; (3) and cultural methods; (4) giving of adrenaline to cause a contraction of the spleen and forcing the parasitized red cells into the circulation. An injection of 0·5 c.c. of 1 in 1000 adrenaline solution should be given subcutaneously, 20 minutes before blood is taken.

The circumstances in which parasites are difficult to find are : (*a*) beginning of a primary attack ; (*b*) in chronic malaria with splenomegaly ; (*c*) after a few doses of an anti-malarial drug; (*d*) the finding of hæmozoin pigment is pathognomonic of past malarial infection. This is found in the large mononuclear and polymorphonuclear leucocytes ; (*e*) response to therapy :—(i) 10 grs. quinine twice daily for 5 days or ; (ii) 1½ grs. (0·1 gm.) Atebrin three times daily for 5 days. This therapeutic test is frequently and justifiably used.

Differential diagnosis :—Fevers–(i) Short :—Influenza, bronchitis, dengue and filariasis. (ii) Longer :—Tuberculosis, kala-azar, enteric, typhus fever and Hodgkin's disease.

Splenic enlargement:—Leukæmia, splenic anæmia, syphilis kala-azar. Anæmia—Ankylostomiasis, hæmolytic anæmias, typhoid. Cerebral—Heat stroke, meningitis, apoplexy, epilepsy. Abdominal —dysentery, cholera, appendicitis, liver abscess, jaundice, Weil's disease, catarrhal jaundice and yellow fever.

TREATMENT :—

℞ Quinine sulph ... gr. x
Acid citric ... gr. xx

Aqua chloroform ad ℥ i : given twice daily in benign tertian infection and thrice daily in malignant tertian infections and continued for 7 days ; or atebrin $1^1/_2$ grs. thrice daily for 5 days.

For women :—Quinine sulph $7^1/_2$ grs. t.d.s for 5 days is well-tolerated ; for children the dose is calculated as $1^1/_2$ plus half the age of the child (5 years $1^1/_2$ 5/2= 4 gr.). Oral administration will be sufficient and effective.

Reasons for failure :—(1) Inadequacy of quinine in the mixture ; (2) faulty preparation of the tablet *e.g.*,—coated with some hard substance making it insoluble ; (3) vomiting of the mixture ; (4) deception practised by the patient out of prejudice.

Parenteral therapy : —Intramuscular and intravenous routes are used ; Intramuscular injection requires scrupulous asepsis and avoidance of large nerves and is necessary only in unconscious patients and in cases of persistent vomiting. Intravenous injections must be given very slowly and the drug must be well-diluted or syncope may occur. Parenteral injections are necessary as a routine measure. It is seldom necessary to continue it beyond the first day after which oral therapy may be continued. Give calomel gr. ½ ; 6 doses at ½ hourly intervals at night and S.S. mag sulph ℥p, at 6 in the morning. At 7-30 and again at 11-30 a.m. give a dose of quinine mixture. It was found that quinine acted best in an alkaline medium :— Sodi bicarb gr. ix, Sodi citras gr. xl, aqua ℥i. Sinton advocated it in the treatment of relapsing benign tertian malaria.

CASE 1.—B.G., Hindu, male aged 22, a resident of a village near Calcutta, admitted to hospital for the treatment of low fever of 3 months' duration ranging from 100·4°F in the mornings to 101°F in the evenings ; his spleen was enlarged 6 inches below the costal margin and of wood-like firmness ; liver was palpable and the patient was very anæmic. Blood showed no malarial parasites on examination. R.B.Cs. : 3 millions ; W.B.Cs : 6000 ; Hb-55%. Both aldehyde and Chopra tests negative ; Widal test negative for Typhoid, para A, para B, in all dilutions. He was constipated. Treated for constipation. This patient was being given quinine sulph gr. v 1 tablet b.d. for the last 1 month by his physician. As he had bronchitis also, he was treated with Calgluquine (quinine-calcium Sandoz) a combination of 10% calcium Sandoz and quinine gluconate (0·37 gm. quinine base per 10 c.c.)

beginning with 5 c.c. ampoule giving injections intramuscularly every other day up to 8 injections and thereafter 3 intravenous injections of 10 c.c. twice weekly and quino-hæmogen B. I. Co.—3 teaspoonfuls thrice daily. It contains quinine, cinchonine, hæmogen arsenic, nux vomica, Ammon. chloride, cinamic aldehyde. Diet: bread, milk and soup and one ampoule orally of essence of chicken 10 c.c. daily for 1 month. Patient cured, his spleen is now just palpable. R.B.C.: 5 mil; Hb: 80%.

Reference:

1. Napier, L. Everard.—The Principles and Practice of Tropical Medicine, 1943.

43, Baghbazar Street, Calcutta-3.

Malaria: Its Recognition and Treatment

An overt attack of *vivax* malaria is in most cases preceded by prodromal manifestations such as headache, lassitude, anorexia, and possibly some gastro-intestinal upsets. In a relapse the temperature curve differs from that recorded in a primary attack in that the fever usually shows definite tertian periodicity.

The chief objects aimed at in the treatment of the clinical attack are the prompt alleviation of symptoms and the radical cure of the infection, with minimum risk of toxic side-effects. Quinine sulphate or hydrochloride given in a daily dosage of 20 to 30 grs. will usually bring about rapid termination of the clinical attack and, in *falciparum* infections, a high rate of radical cure.

Persistent vomiting may be relieved by injections of 5 per cent glucose in 200 to 400 cc. of normal saline, repeated if necessary, with the addition of 1 mg. of thiamin hydrochloride for each 25 g. of glucose.

The action of the 8-aminoquinolines on the secondary tissue phase of of *P. vivax* is well known. The first of these to be used for the prevention of relapse was pamaquin, which was given in combination with quinine—for example, 0·01 g. of pamaquin concurrently with 10 gr. (0·65 g.) of quinine sulphate twice daily for 10 days. American workers have recently shown that certain other members of this group, for example, pentaquine, isopentaquine, and primaquine—are more effective than pamaquin and less toxic, primaquine being probably the best of the three in both respects. Close medical supervision is necessary, however, with all members of this groups of drugs, chiefly because of the occasional unpredictable occurrence of acute intravascular hæmolysis. The *routine* administration of these drugs in all cases of *vivax* malaria is not recommended. They should be reserved for the treatment of stubbornly relapsing cases, more especially in circumstances where there is no risk of re-infection.

Chloroquine brings about a rapid alleviation of clinical symptoms in all forms of malaria and a high rate of cure in *falciparum* infections. It has the advantages over mepacrine of not tinting the skin and of being less likely to induce disagreeable intestinal or psychotic manifestations. —(*Refresher course for G. Ps., B. M. J.*, 27-10-1951).

THE MANAGEMENT OF A CASE OF "IMPACTED SHOULDER PRESENTATION" IN A RURAL AREA

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ON the 1st of February '52, as I was on my way back home after attending a patient, I was asked to attend on what was found on examination to be a case of prolapse of the hand: I was not prepared to deal with such a case, as I had no instruments or assistance. Still in view of the urgency of the situation and of the fact that any delay might result in the death of the mother, I decided to do my best with little else than my mental resources.

History:—Pains had commenced 4 days previously. The membrane had ruptured and the pains diminished, and had almost ceased three hours prior to my seeing her.

Examination:—Patient was a young woman, aged 20, primipara; she was anæmic, exhausted, and wore an anxious look. The abdomen was distended and the bladder appeared to be full. The vulva was swollen and labiæ were apart, bluish and tender. One hand of the fœtus was seen protruding out. The country midwife who had been in attendance, had forcibly pulled hard at the hand with the result that the hand was torn at the arm pit, with a slit showing at the axilla. The hand had, as a result, become very much swollen and bluish. The *dhai* left the patient to her fate and retired without notice.

On palpation:—The fœtus was found to be lying anteroposteriorly, the head behind the symphysis pubis and the breach in the sacral fossa. Neither the fœtal heart sound nor fœtal movements could be heard. The neck was bent.

P. V. examination:—The vulva was painful; the os was fully dilated. The protruded hand could be felt up to the shoulder joint. The intercostal space, the shoulder joint, the outer end of the clavicle of the same side were impacted in the birth canal. The membrane had ruptured but the bladder was full.

TREATMENT:—The patient was given tea and diet and was reassured. She was then placed in the lithotomy position. The bladder was evacuated with a metal catheter. Through the slit at the torn shoulder of the fœtus, I introduced my finger. The intercostal muscles at the spot were torn up in bits as also parts of the ribs and brought out. Thus, an opening admitting two fingers was made. Through this opening, I caught the pleura, lungs, and pericardium with the heart, all of which I brought out in bits. The diaphragm was then torn and the entire gut of the fœtus was pulled out through the same slit. The liver and other viscera were then brought out. The fœtus which was at first very much impacted became thin and loose.

After a few minutes the abdomen of the fœtus came out easily following a slight bout of pain of the uterus. It was very easy to

pull the legs first, and then the head. Massaging of the uterus expelled the placenta in a short time. The parts were cleaned and dressed and the patient was put to rest with stimulants. There was no abnormal bleeding. Penicillin (4 lacs units) was given for 5 days and the patient made an uneventful recovery.

Conclusion.—This case is of interest because the entire viscera of the fœtus (thorax and abdomen) was brought out through a small slit which had been made by the hard pull on the prolapsed hand. The other and perhaps more important point of interest lies in the fact that in a rural area, with no instrumental or other help a general practitioner managed a difficult complication, with courage and skill and was able to bring it to a successful issue. There is no doubt this was done despite the grave risks involved in the procedure adopted. The uneventful recovery, with no complications, was manifestly due largely to the vitality of the rustic patient.

Technique for the Diagnosis of Undescended Testis

Dr. Kunstadter, recommends that in diagnosing the condition of undescended testis, it is desirable that the patient is examined in the upright position with the examiner sitting in a chair or on a stool facing the patient. For examining the right inguinal region, the left hand of the examiner is placed over the right buttock of patient for support. The thumb of the right hand is placed above the region of the right internal inguinal canal and the canal is explored up to the abdominal inguinal ring. If the testis is not intra-abdominal, it may be determined by a "stripping" manoeuvre. If the testis is fixed, downward stripping will not accomplish placement of the testis into the scrotum. If the testis is mobile or "migratory," it may be manipulated into the scrotum by moving the thumb and index fingers downward in their original relationship, both fingers being in contact with the testis. On release of the fingers the testis usually retracts immediately to its original position.—(*J.A.M.A.*, 148: page 117, 1952).

Cardiac Emergencies—Pulmonary Embolism

Pulmonary emboli generally come from the lower extremities and usually follow pelvic surgery, deliveries, or prolonged stays in bed in older individuals, particularly in those with varicose veins. Usually the patient becomes dyspnœic, cyanotic and restless; he complains of severe substernal pressure. Shock and death may occur rapidly. The differential diagnosis from myocardial infarction, dissecting aneurysm and spontaneous pneumothorax may be difficult. The history, X-ray findings and ECG may be helpful. In the treatment of this condition oxygen is most important.

Morphine grain ¼ to ½ combined with atropine grain 1/75 to 1/150 will help to relieve pain and reduce vagal reflexes. Vasodilator drugs like papaverine in doses of 1½ to 3 grains or aminophyllin in a dose of 7½ grains may be administered intravenously as vasodilators. Atropine 1/100 grain may be given intravenously to reduce the reflex spasms produced by vagal mechanisms.

Ligation of the leg veins or of the inferior vena cava may be indicated at times but with adequate use of the anticoagulants this is rarely needed now. Prophylaxis may prevent the development of pulmonary emboli in many cases where such a complication would be anticipated.—(*Jour. Med. Soc. N.J.*, 49, 7, 299, July 1952).

A CASE OF MUMPS FOLLOWING HERPES ZOSTER

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IT is the general belief and also the experience of many that chicken-pox sometimes follows an attack of herpes zoster or develops in contacts with herpes zoster;—this is usually considered to be due to the akinness of the infective agent, *viz.*, a filterable virus causing both the diseases.

But in the case under report, the mumps followed an attack of herpes zoster in the same patient which is certainly unusual.

Case Report

CASE 1. A Hindu male, aged 20 years was admitted into the hospital with a history of fever between 99°F and 101°F for 3 days and pain all over the body; at the same time he developed vesicular eruptions on the left side of the chest associated with much burning pain and irritation which made him sleepless.

On examination.—1. *General*:—Temp. 100°F. Pulse rate—110 per min.; respiration—28 per min; tongue: moist and coated. Bowels: constipated. Liver and spleen—not palpable. Heart, lungs and other systems—N. A. D.

2. *Local*:—Multiple small vesicles on the left side of the chest as well as on the front and back.

3. *Laboratory*:—Blood for malaria: negative.

DIAGNOSIS:—Herpes zoster.

TREATMENT:—Rest in bed; fluid diet *e.g.*, milk and sago *conjee* and fruit juices prescribed. Bowels opened by S. S. Mag sulph—℥i, given orally; (1) Pituitary extract—½ c.c. Sig. given intramuscularly daily; (2) Benerva (100 mg.)—2 c.c. intramuscularly every day; (3) Mist Sodi salicylas et bromide ℥i t.d.s.; and (4) Locally dusting powder to be rubbed mildly over the affected side of the chest to keep the part dry.

After six days of treatment, the vesicles dried up and the pain subsided completely. The patient was convalescing satisfactorily. About a week later, he suddenly developed pain and swelling of both the parotid glands as well as the testes associated with a remittent type of temperature ranging between 102°F. and 104°F.

On physical examination:—Temperature – 102°F; Pulse—120 per min. Respiration—30 per min.; Parotid glands—enlarged and very tender; Tongue—moist and coated; Bowels—constipated; Liver and spleen—N. P.; Heart and lungs—N. A. D.; Generative system—both the testes enlarged and tender on pressure. All other systems—N. A. D.

Laboratory examination:—(1) Blood for M. P.—negative. (2) Blood for total and differential count of W.B.C.—moderate leucocytosis with relative increase in lymphocytes. (3) Blood for widal test—negative. (4) Blood culture—negative for enteric group.

TREATMENT:—Complete rest in bed. Fluid diet *e.g.* Milk, sago *conjee*, fruit juices, Horlick's milk and Ovaltine.

1. ℞ Tab. Sulphadiazine ... ii
„ Redoxon .. i
Cal. gluconate .. gr. xv
fr. Pulv. 1.
Sig. t.d.s.

2. ℞ Mist Sodi salicylas et bromide .. ℥ i
Sig. t.d.s.

3. ℞ Penicillin crystalline G 1 lac units given I.M. every 3 hrs.

4. ℞ Locally:—(a) Antiphlogistine dressing on the inflamed parotids. (b) Ichthyol-belladonna-glycerine paint on the scrotum and suspensory bandage applied.

This medicinal treatment was continued for six days and penicillin was given up to 50 lacs units. But as there was no satisfactory response I gave chloromycetin orally 2 capsules at once, followed by one capsule every 3 hrs. The patient responded marvellously to this—the pain and swelling in the parotid glands subsided completely and the testes resumed their normal size after 24 capsules of chloromycetin had been administered ; no other medicine was given orally or parenterally nor anything was used locally on the inflamed parotids or the testes.

The patient made an uneventful recovery with chloromycetin and was discharged 'cured'.

Discussion.—Although the incidence of mumps following a case of herpes zoster is very unusual, it is just possible that the infective agent is similar in both the diseases; for we know that mumps is caused by a neurotrophic filterable virus and so also is herpes zoster.

Another point of interest in this case is the prompt response to a course of treatment with chloramphenicol, which shows the effectiveness of the drug against viral infections in which penicillin is of no avail.

Acknowledgement.—My sincere thanks are due to Dr. S. R. Ghosh, M.B., Superintendent, Police Brigade Hospital, Barrackpore for his kind permission to investigate and report this case and also to Dr. S. C. Bhadra, Pathologist, Police Brigade Hospital for helping me with the laboratory examinations recorded above.

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RING OUT THE OLD AND RING IN THE NEW 1952 AND 1953

THE year that has passed (1952) witnessed one of the most spectacular and successful events in the world's history *viz.*, the unprecedented first general elections in India on the basis of adult franchise. The Indian National Congress which had zealously and unremittingly advocated our claims and voiced our aspirations for over 50 years and had ultimately won a bloodless victory in the fierce fight, was returned to the legislatures in a very large majority. Even in the few States, where owing to lack of proper understanding and consequent differences of opinion among public men, the Congress did not secure an absolute majority, it was possible to form stable Congress ministries which have been functioning satisfactorily for over 8 months and which promise to continue to work for the good of the people in all branches of administration in the years to come.

The General Elections in Great Britain resulted in the defeat of the Labour party and Mr. CHURCHILL coming again into power not however, with a comfortably large majority. President TRUMAN of the U.S.A. having decided at the last moment not to contest the Presidential Election supported Mr. ADLAI STEVENSON, the Democratic candidate against General EISENHOWER (Ike, as he is popularly called) the Republican candidate, who ultimately won not however, by a large majority. The cold war, continued to rage, albeit somewhat shorn of its intense glacial fury, but did not materialise into active belligerence. So, while we may be thankful that we have been spared the horrors of such merciless warfare during the year that has passed, we should continue to pray that the New Year (1953) may be similarly free from Armageddon.

The Korean tangle remains unsolved inspite of the strenuous efforts made so far by peace lovers and the world is looking forward to an abiding peace. The recent unofficial visit to this theatre of activity (or is it inactive but smouldering ?) by the future American President will, we hope, augur well and produce peace. India did her bit in the Korean War, by way of providing medical assistance to the wounded on the fields of battle.

"GOOD HEALTH" for every one should be our slogan for the coming year. One of the most important and serious challenges facing the medical profession in India today is the difficulty of providing adequate medical relief to over eighty per cent of the 360 million people in our country, who live in rural tracts. We cannot hope to have healthy and happy citizens, if insanitary villages frequently ravaged by epidemics of preventable diseases, poor housing conditions, over-crowding, lack of essential nutritional requirements and thoroughly inadequate protective-health-services continue to prevail in the land. Many among the 45 to 50,000 qualified medical practitioners in our country—a totally inadequate number for a 360 million population—are under the impression that rendering medical care and aid to the necessarily small number they cater to, will suffice to bring about a Good Health Programme for the country as a whole. They forget that the curative services they render, brings relief to only an infinitesimal proportion of the total population. Unless they visualize the great paucity of medical relief for the suffering millions in rural areas, and are actuated by a more philanthropic and a really human approach to the problem and make every effort to stimulate themselves and their fellowmen to become conscious of their part in helping to keep every one well, it would not be possible to make any substantial progress in improving the health of the people. "Raise the standard of living" is the slogan we constantly hear on every platform but '*Raise the standard of public health*' should, in our opinion precede any direct attempt at raising the '*standard of living per se.*' The two go together no doubt, but the sequence of action needs revising.

The famine conditions and the acute scarcity of food which prevailed during the major part of the year in large areas of our country during 1952, added greatly to the difficulties of the States administrations and of the Centre in the matter of safeguarding the public health of the people. They had first to find the funds to relieve the acute distress created by the famine conditions ; this necessarily put a check upon the availability of funds for the normal public health and other activities on the governmental programmes.

Writing in the ANTISEPTIC for January 1952, we expressed our sincere hope, that during the year greater and more vigorous attention would be paid to the general health of the people of India. This expectation has not altogether been belied. For, we see there

have been substantial improvements in various directions, though more could have been achieved, if larger allotments had been made and if famine conditions had not complicated matters in the manner they did.

Luckily, the magnificent assistance given by the international organizations, prominent among them being the WHO and the UNICEF as also the governments of Norway and New Zealand, the American Cancer Society and others enabled a number of productive and useful health schemes to be carried out successfully during the year. The large scale anti-malarial operations initiated by the expert staff of the WHO and carried out by the P. H. departments of the Central and States Governments with WHO's aid, have been responsible for the reclamation of extensive and highly malarial swamps and their rapid conversion into rich arable lands 'where people have now settled down comfortably without risk of malarial infection, and are carrying on agricultural operations on a large scale. The programme of B.C.G. vaccination against tuberculosis was in progress on a nation-wide scale during the year as will be seen from the figures supplied by the Directorate of Health Services, New Delhi valid to the end of 30th September 1952. Out of a total of 10,952,298 persons tested so far in the whole of India, 4,772,821 were found positive and 3,493,632 persons were vaccinated. We also note from this statement that among the Part A States, Madras and Madhya Pradesh have lagged very much behind the other States in the matter of B C.G. vaccination. The people of these States should be advised by the respective governments to get themselves tested and vaccinated, in order to obtain protection against the dire disease.

Amongst the many other health measures sponsored or assisted by international organisations we may mention the following :—

1. The establishment of a Cancer Research Centre, which was inaugurated about a fortnight ago at Bombay by the Union Health Minister, RAJKUMARI AMRIT KAUR. It is the only one of its type in the whole of Asia and affords proof of what can be achieved by pooling resources, official and non-official, national and international. We trust that nothing but the best, whether in the fields of research, or equipment or of treatment will finally prevail in this institution and that the assurance given in this regard by the Union Health Minister will be duly implemented by the Centre.

2. The establishment of an up-to-date factory for the manufacture of Penicillin in India which will help to meet the large demand in our country for this very useful antibiotic at comparatively cheaper prices.

3. The establishment in India of a DDT factory, which, when it goes into full production, will be able to meet our entire requirements.

4. The establishment of a radon plant at the Calcutta Institute of Nuclear Physics where radon isotopes will be in constant production and where therefore, a cheaper isotope-service will soon come into commission and meet the needs of hospitals in the land.

5. Assistance to various schemes for the treatment and prevention of spread of Hansen's disease.

6. The institution of measures for the rehabilitation of the blind and the prevention of blindness in India.

7. The inauguration of family-planning centres for the control of population.

8. The well-planned and efficiently carried out anti-venereal campaign in selected areas.

9. The All-India Medical Institute for Post-Graduate Medical studies which will soon come into existence at Delhi, thanks to the munificence of the New Zealand Government under the Colombo plan.

10. Local philanthropy during the year has been responsible for starting sanatoria for tuberculosis patients, and maternity hospitals and child welfare clinics in various centres in India, on a modest scale.

All these achievements put together have enabled us just to enter the fringe of the vast field of public health in India and we are still left to contend with the most pressing problem of Rural Medical Relief which continues to give the authorities cause for perpetual anxiety and worry. Mobile dispensaries have been recommended and some have already been brought into commission, for affording medical relief to rural areas. But the urgent necessity for providing a very large staff of doctors, and other ancillary personnel has to be met. This is being considered from various angles by the States and Central Governments and by the All-India Medical Council. There appears to be a general concensus of opinion that the standard of medical education should *on no account*, be lowered for this purpose and that there should be one uniform standard for the whole of India. We ourselves have frequently referred during the past year to this and several other aspects of medical education and supported the case for a double shift system in Medical Colleges. We do fervently hope that a satisfactory solution acceptable to all will soon be evolved.

The problems that face us in the new and subsequent years, have therefore, to be met squarely and boldy. This would require expert guidance and sound statesmanship and more than these, financial assistance of a magnitude that will be far in excess of that allotted in the Finalised Five Year Plan. Our Union Health Minister RAJKUMARI AMRIT KAUR addressing the doctors of the Chittaranjan Cancer Hospital at Calcutta on the 4th January 1953, said she was disappointed because "so little has been allocated to Health in India's Five Year Plan."

"More production is admitted to be the solution of our economic ills, but the workers' health is the most essential factor for an increase in our production", she said. She regretted that sufficient funds were not provided in the Central and State budgets for expansion of health services.

"Our Finance Minister, Mr. DESHMUKH, tells me that he wants to give me more money for health services, but he is sorry because he has not enough to give me," RAJKUMARI AMRIT KAUR said. "But money has to be found somehow for these essential services."

The Health Minister said that medical men were not vocal enough and she found that she was fighting a lonely battle. She assured the doctors that she would do her best to help the institution "which is meant for all humanity."

Referring to research work done at the hospital, the Health Minister said that these workers should be encouraged by giving them "enough money to live upon" so that they could devote their whole attention to their work.

The ANTISEPTIC has played its part for 50 years in espousing and fighting for the cause of medical relief and public health for the people of India, and in advancing the multitudinous interests of the medical profession at every step. The varied nature and extent of the devoted services rendered by the journal in several directions will be duly assessed, collated and presented to the medical profession during the ensuing Golden Jubilee of the ANTISEPTIC which it is proposed to celebrate early next year (1954).

To our many contributors who have from time to time, helped us with valuable articles and case reports, we hereby offer our sincere and grateful thanks. We hope and trust that we will continue to have their hearty and willing co-operation in the New Year. We wish our numerous readers and advertisers the best of every good thing that they would wish for themselves in the New Year, and earnestly request them all to continue to give us their valuable patronage and co-operation in the years to come.

JAI HIND.

INDUSTRIAL MEDICINE—LABOUR WELFARE

"AN industrial doctor had a big responsibility and had an important role to play in Industrial Health Service" said Shri Dr. U. KRISHNA RAU, Minister for Industries and Labour when he inaugurated on the 6th June 1952, the Madras State Branch of the Society for the Study of Industrial Medicine in India. Inaugurating the Fourth All India Conference of Industrial Medicine in Bangalore on the 10th December 1952, the Chief Minister of the

Mysore State said "A health worker is an efficient worker; an efficient worker will produce more and make the society enjoy more amenities and good". It was the duty of the State to see to the health and well-being of the large number of workers in factories and other industrial concerns. Big industries, where people crowded together for work inevitably gave room for unhealthy conditions. He cited as example the prevalence of silicosis in the Kolar Gold Fields. In each industrial concern the workers might become victims to a particular disease. It was therefore, highly important to study these special diseases and devise suitable remedies". Dr. J. C. PATEL of Bombay who presided over the Conference said in the course of his address "In a world which is rapidly changing, where there is a transition from an agricultural to an industrial mode of life, people concerned in anyway with the welfare of individuals must pay due attention to the stresses and strains involved in this change. We as doctors and certain other individuals, directly concerned with the people working under industrial conditions must naturally take the lead in making this change as free from harm and damage to human beings as possible. That is the ideal for which industrial medicine stands and that is the ideal which we will achieve". Much the same ideal was put forward by Sri Dr. U. KRISHNA RAU, when he said, "industrial medicine would ultimately contribute to industrial prosperity and contentment. There were several problems besides to tackle in industry like conditions and hours of work, wage disputes, periodical medical examinations, proper housing and sanitation, transport of workers from their residence to and from their working places, recreational facilities and opening of canteens".

Modern industrial processes are highly technical and complicated. Machines are dangerous; raw materials handled by employees may be poisonous, factory sanitation, lighting, ventilation and general welfare need scientific planning and management; no single industrial concern can, with the best of intentions in the world, hope to deal with all these various requirements efficiently and satisfactorily without expert technical assistance from competent persons, specially qualified to deal with them.

In western countries the health of the industrial worker has come to be regarded as a matter of prime concern and nearly all the big industrial concerns have their own special medical services. In all these countries, besides routine medical work (curative and preventive) particular attention is paid to vocational guidance, rehabilitation work, treatment and employment of the disabled, industrial housing and aspects of industrial psychology like fatigue, boredom, accidents, and also time and motion studies. In our country, man power is cheap and readily had as there is unemployment everywhere and so, there has so far been little or no incentive to do much in the direction of safeguarding the health of the worker.

The State and the employers are just beginning to realise the value of a healthy and contented labour.

The steps so far taken during the many years that have passed since large scale industries started developing, have been only spasmodic and confined to a few large concerns which had their own medical staff to examine, prescribe and certify—in other words, a dispensary service and not real Industrial Medicine. The Whitely Commission on Labour, presented its report to Government about 25 years ago on the working conditions in factories and plantations in India. In 1945, the Health Survey and Development Committee came out with their epoch-making report on health conditions in India. The formation of an Industrial Medical Service was one of the Committee's main recommendations. But this was to follow as a necessary adjunct to the nationalised medical services. Till the latter was a *fait accompli* the Committee recommended the immediate formation of industrial medical departments in each State, the founding of chairs in industrial health in all Universities and the training of industrial medical officers. Housing of labour was also one of their important recommendations and the Committee considered that industrial housing should be the responsibility of provincial governments acting through local authorities. In 1946, Dr. BEDFORD of the British Industrial Health Research Board toured this country at the invitation of the Government, inspected important industrial areas and advised the Government on the measures necessary for improving the working conditions and the health of labour. The Government of India in 1946 appointed a Labour Investigation Committee to report on the working conditions in several industries. Fifty different industries were thus studied and reports furnished on every one of them. In 1948, the Indian Factory Act was amended so as to bring it into line with the English Factory Act. Quite recently the Employee's State Insurance Scheme was brought into operation in Delhi and Kanpur and the Madras Industries and Labour Minister Sri Dr. U. KRISHNA RAU announced a few weeks ago that the scheme will be introduced in Madras also during this year. This measure seeks to provide medical, sickness, disability and maternity benefits to labourers. It will ensure factory workers against risks and help dependents in the event of death as a result of employment injury. The open discussion group No. IV of the Sixth International Conference of Social Workers discussed the Welfare Services in Industry, on the 18th December 1952 at Madras. The sources for financing them were outlined :—(1) The government; (2) The employers; and (3) the workers.

The function of an Industrial Medical Service consists in making the worker fit for the job and making the job fit for the worker. The former is achieved by giving every labourer a thorough examination at the time of his employment, by instituting a system of

periodical examinations (atleast three, if not four, times a year) and by providing ancillary services. The second function of making the job fit for the worker is achieved by careful and periodical checks, by the medical officer and his staff of the environment in which he works with special reference to temperature, humidity, lighting, ventilation, hours of work and rest, toxic hazards and dangerous machinery.

The Factories Act lays down the principle of compulsory notification and a penalty for non-compliance. In order that the purpose of this Act may be enforced, it is necessary that all factory inspectors, all certifying surgeons, all civilian general medical practitioners, all factory doctors, and all persons who report the occurrence of a notifiable disease in a labourer should be made aware of this section of the Factory Act. The whole Act deserves wider publicity amonst the large body of general practitioners, the employees, trade unions and others interested in the development of the health of the labourers of the country. Only a small number of employers have supplemented government, municipal or local body's medical institutions, by establishing their own dispensaries and hospitals for their employees, while the vast majority have lacked the foresight necessary to visualize the immense mutual benefits conferred by the institution of such facilities in their own compounds. The labouring classes are also to blame to some extent. They have not actively co-operated in the matter of medical relief. The Employer's State Insurance Scheme now sought to be introduced gradually in all important industrial centres will we hope, solve the problem to a great extent: The implementation of this scheme would require additional hospital facilities and the services of full-time and part-time doctors at industrial centres. The institution of the panel system would also become necessary. Doctors would have to play an important part in making this scheme a success. In England, they have newly instituted Diplomas in Industrial Health. Those who wish to become Industrial Medical Officers must equip themselves properly for the task and they should possess wide sympathies and interests which would enable them to work harmoniously with both the management and the workers.

THE 27th ALL INDIA MEDICAL CONFERENCE—PATNA SESSION—NATIONAL HEALTH PLAN ADVOCATED

SHRI Dr. B. V. MULAY of Sholapur (Bombay) who presided over the 27th Session of the All India Medical Conference held at Patna on the 26th December '52 made some very important and valuable suggestions relating to medical matters. He suggested that the Ministers of Health, medical men occupying ministerial

seats, and sitting in the legislatures and representatives of the Indian Medical Council and of the Indian Medical Association should sit together and formulate a plan of health, sanitation, medical relief and medical education, universally applicable to the whole of India. He also suggested that the Governments should agree to implement this plan, to the exclusion of all other plans in formulation or under execution. The Indian Medical Council should be constituted by equal repesentation from States, State Medical Councils, the Indian Medical Association and a constituency of teachers of medicine in the Universities of India, including Deans.

Thereupon the conference, by a resolution requested the Central and State Governments to consider the Indian Medical Association as the most representative organization of the profession in the country and urged the need to consult it on all measures affecting public health. The Conference rightly regretted that in formulating health schemes in the first five year plan, the Planning Commission did not consult the Association; no health schemes could succeed unless these were planned with the concurrence and active co-operation of the Association and enthusiastically supported and implemented by the medical profession. These resolutions of the Conference deserve the most earnest and careful consideration by the Central and States Governments.

If the Indian Medical Association should be acknowledged as the authoritative and representative organization of the medical profession in the country, every one of the 45,000 independent medical practitioners without exception, should become a member of the Association, as only then, would it be possible to exert concerted pressure on the Governments in respect of the reforms and improvements that may be called for.

The valuable recommendations made at the conference will, if implemented by the Governments greatly enhance the dignity and usefulness of the noble profession, while at the same time they will augur well for the promotion of good health among the people and provide an increased measure of medical relief to the millions of suffering humanity in India. They will also help in creating complete harmony and good will amongst the members of the profession.

Other useful suggestions made by the President related to: the insistence on a uniform standard of medical education for the whole country; the inclusion of Ayurveda in the medical curriculum together with the creation of a post-graduate qualification, an M.D. in Ayurveda; the overhauling of the present Nursing Councils by appointing a Committee of Representatives of these Councils and the Indian Medical Council and Association who would suggest suitable ways and means for expanding the training centres so as to provide a continuous supply of nursing personnel; the appointment

of a Commission of Representatives from the teachers of medicine, the All India Medical Council and Association, to recast the medical curriculum, plan examinations and arrange for pre- and post-graduate medical training; and the early establisment of an All India Medical Institute for post-graduate teaching at Delhi, by utilising the donation of £ 100,000 provided by the New Zealand Government under the Colombo plan. With most of these suggestions many will certainly agree; we are not however, quite sure that the inclusion of Ayurveda in the medical curriculum, except as a subject for post-graduate study, will find universal favour amongst the members of the medical profession for, who does not know that the two systems differ so widely and basically in fundamentals that it will be very difficult to correlate and collate the curricula of studies required for these two systems ?

Srimathi RAJKUMARI AMRIT KAUR, the Union Health Minister, who addressed the Conference called upon all the medical practitioners in the country to contribute their due share in the alleviation of suffering and prevention of avoidable sickness in the communities amongst whom they live and practise their profession. She pleaded for "*group practice*" on the lines of the Health Centres under the British Health Service Scheme. She was quite alive to the immensity of the health problems which the country had to face today and to the country's meagre resources in trained personnel, money and equipment. "Modern medicine has got to be the basis of medical aid and relief in our country; we cannot afford to be left behind the other countries, in the realm of scientific medical services" said the RAJKUMARI.

She then referred to the modest health programme which the Planning Commission had drawn up in the finalised plan, for affording rural medical relief, and to its having been put into practice in selected rural areas on a country-wide basis, as part of the various community development programmes. She hoped that the successful implementation of these pilot schemes would soon prove their efficacy and value to the general public, so that it might become possible to extend them in the near future to other areas also. We also share in this hope and eagerly await the reaction and the response from the public to these pilot schemes.

Quinine in Malaria

Sir Philip Manson-Bahr, in a letter to the Editor of the *British Medical Journal*, (*B.M.J.*, p. 1403 : 8-12-1951) emphasized once more the life saving properties of quinine injections and refutes the doubts and disbeliefs that exist on this subject. He stresses that there were many occasions, both during and since the termination of the Second World War, when he had seen many lives saved by intravenous or intramuscular quinine, when synthetic drugs had failed. He winds up his letter by saying "*the fact is that at present we possess no single drug which has such a rapid action on the subtertian trophozoites as has quinine.*

SURGERY

Pulmonary resection for tuberculosis.–(*Tuberculology*, 12, 4, pp. 226–236, 7th June 1952).

Barber and Reese, both of Bret Harte Sanatorium, present two interesting additions to the problem of the management of the post-resection pleural space and preventing of over-expansion of the remaining lung tissue.

The indications for pulmonary resection have become more or less uniformly accepted. They are as follows:—

(1) Bronchostenosis.
(2) Tuberculous bronchiectasis.
(3) Thoracoplasty failures.
(4) Destroyed lung.
(5) Giant or tension cavities.
(6) Pneumothorax failures.
(7) Lower lobe disease, with cavitation, and usually with failure of previous collapse procedures.
(8) Broncho-pleural—cutaneous fistulæ.
(9) Tuberculomas.
(10) Those cases in which a tuberculous lesion is resected because there is some doubt as to whether it is a tuberculous lesion or a tumour.

Gale *et al* reported 80 resections with only two deaths (2·5 per cent mortality). In Gale's series of 80 cases he lists in order of frequency.

(1) Thoracoplasty failures.
(2) Bronchostenosis.
(3) Bronchiectasis.

Barber and Reese consider that the number one cause for resection was bronchostenosis; and considering how many times thoracoplasty failures are due to stenosis and tuberculous bronchiectasis, it is easily seen how difficult it is to list what would be the primary cause for the resection.

Post-operative complications:—Just as the indications for resection have become more or less of a standard outline, so too the complications. Practically all of the large series of cases show the same post-operative complications, among which are:—

(1) Empyema and broncho-pleural fistula.
(2) Tuberculous empyema without a fistula.
(3) Wound infection both with and without empyema.
(4) Fatalities at operations due to hæmorrhage, etc.
(5) Immediate fatal spreads, that is within the first few days post-operatively.
(6) Post-pneumonectomy thoracoplasty deaths.
(7) Failure of sputum conversions.

Since 1946, Barber and Reese have had as their only complications three broncho-pleural fistulæ with empyemas and two spreads to the contralateral lung. Their incidence of wound infection has been *nil*. In one of the broncho-pleural fistulæ the complication occurred in a left pneumonectomy beneath a previous thoracoplasty. The fistula was small and was treated by bronchoscopy and cauterizing the fistulous area with silver nitrate with resultant closure, following some twelve applications at weekly intervals. This patient, they report, is well and earning her own living some two years following closure of her fistula. The other broncho-pleural fistula and empyema was treated with Eloesser flap open drainage and the bronchial fistula cauterized from both ends, with closure of the fistula.

The post-operative care of these patients:—An immediate post-operative bronchoscopy is done on the operating table. If it is a lobectomy, two right angle tubes, one in the second anterior interspace, and the other in the eighth posterior interspace, are put in and connected up to under water bottle traps, and the remaining lobe or lobes re-expanded. Then 1·0 gm. of streptomycin and 500,000 units of penicillin are instilled into the anterior

tube, and the posterior tube is clamped for two to four hours and then opened. These tubes are usually left in for a period of from 24 to 48 hours depending upon the time required for re-expansion of the lobes. The patients are sent back to their rooms, in their beds to minimise the necessity of repeated transferring from a guernsey to a bed. Intranasal oxygen (6-8 litres per min.) is given for 24 hours, or longer if necessary. Tracheal suction is performed with a catheter every 30 minutes until the patient is able to cough adequately. Even after they have reacted sufficiently to cough, tracheal suction should be performed every two hours for another 12 hours or so, for the authors have found that just the presence of a catheter in the trachea brings about a stronger cough reflex, thus allowing the patient to clean out his tracheal bronchial tree more thoroughly. No particular efforts to push fluids intravenously, were made by the authors. Usually 1000 c.c. of 5 per cent glucose in saline or water to be given during the first 24 hours post-operatively preferring that the patient take his fluids by mouth if possible.

Upper lobe resection with concomitant thoracoplasty:—There is no doubt, Barber and Reese opine, that this combination is more economical for the patient and causes much less psychic trauma than the multi-staged procedures. Also these patients have been their best salesmen in convincing other hesitant patients that they should have surgery. In so far as they could tell from going over the case histories, there is no greater loss of respiratory function by this method than in the usual seven rib thoracoplasty for an upper lobe cavity.

Post-operatively these patients, like all their resections, were placed on six months, bed rest, since their purpose in the resection was merely to extirpate that portion of the lung which they felt would be mechanically impossible to collapse by ordinary means.

Cancer of the breast.—Where neither surgery nor radio-therapy offers any prospect of cure or relief, it is well worth while to try the effect of hormone treatment. Retrogression and even disappearance of primary growth and secondary deposits have been recorded after both œstrogen and androgen therapy.

If androgens are used, testosterone propionate is usually given in a dose of 100 mg. three times weekly by intramuscular injection. Methyl testosterone is thought by some workers to be less effective.

Oestrogen is given as stilbœstrol, 15 mg or ethinyl œstradiol 1–2 mg. daily, but enormous doses upto 200 mg. of œstrogen daily have been used in the U.S.A. with reported success.

Androgen therapy in high dosage is followed by masculinising effects in some cases, but in the context of inoperable cancer this is no reason for stopping treatment or reducing dosage. Nausea may interfere with the oral administration of stilbœstrol, when the drug should be changed to ethinyl œstradiol in equivalent doses.

Vaginal bleeding due to endometrical proliferation may complicate œstrogen treatment, especially if the administration of the hormone is stopped, when œstrin-withdrawal bleeding occurs. Ankle œdema may develop with, both types of hormone treatment.—(*Medical World*, Sep. 5th 1952).

Radical amputation of the penis for carcinoma.—(*Ceylon Med. Jour.*, Vol. 1:2, Oct. 1952).

Surgeon Rajasingham of the Colombo General Hospital describes some of his own variations in the technique of certain very common operations. Here is one relating to the radical amputation of the penis in which the author has simplified the technique to some extent and obviated certain snags from interfering with the uniform success of the operation.

The standard operation consists in excision of the penis from above downwards and backwards (ventro-dorsally) including the two crura. The author found it much easier to perform this operation in the reverse direction *viz.*, from behind forwards (dorso-ventrally).

He begins with a mid-line incision over the bulb of the urethra and this structure is exposed and divided transversely. Working laterally the crus is identified and lifted up with a periosteal elevator and as the triangular ligament is approached the individual vessels and nerves clamped and divided as they appear. The method adopted by the author gives a completely hæmostased bed and as radical an incision as possible with a minimum of trauma and œdema. A point with regard to the creation of an artificial meatus. Text-books advise a splitting of the end of the urethra which projects slightly beyond the side taking both skin and urethra. A simple device has rendered the meatus proof against the stenosis that occurred in the author's earlier cases. The essential step in this operation is the raising of a flap of skin on either side, equal in width to the slit urethra and the suturing of the two edges (mucous membrane and skin) on the two sides.

OBSTETRICS AND GYNÆCOLOGY

Variations in temperature during pregnancy and labour.—(*Medical Press*, 6-2-'52). For a century there has been widespread interest in the human temperature, more particularly since Wunderlich published his extensive observations in 1868. Recently fresh observations have been made concerning the temperature during the menstrual cycle and now Imaz and Falen have published facts on the temperature during pregnancy.

Records were kept of twenty women in the later months of pregeancy, the temperature being taken sublingually with the thermometer in place for five minutes. In sixteen women there was a significant drop in temperature of over 2°F. between twenty four and forty eight hours before the onset of labour. A slightly greater rise of more than 3°F. was noticed once labour commenced.

They suggest that careful temperature-taking may indicate the imminent onset of labour in the absence of other signs and symptoms. It is well within the competence of the general practitioner to assess the value of this sign.

Anæsthesia in obstetrics with combined intravenous alcohol and intravenous oxytocin.—(*Am. J. Obst. Gynaecol.*, Vol. 63, April '52).

White reports the results of his observations on the use of intravenous injections of alcohol for obstetrical analgesia, combined with I.V. injection of oxytocin (post-pituitary extract) to induce labour. The average duration of labour in the first thirty cases thus treated was 7·3 hours in primiparas and 4·8 hours in multiparas. Barbiturates were not required; dosages of pethidine and scopolamine could be considerably reduced. Amnesia was however, proportionate to the dosage of scopolamine administered.

The babies delivered after this method of combined induction of labour and analgesia cried spontaneously and suffered from no respiratory depression. The I.V. alcohol did not retard the effect of the pitocin, but helped in producing "good and safe analgesia". The I.V. injections were given into an antecubital or forearm vein through a 19 gauge needle. Two bottles were used connected by an Y tube to the syringe, one bottle containing the oxytocic in the strength of one unit of oxytocin in 50 c.c. of 5% glucose in distilled water and the other bottle containing 7·5% alcohol in 5% glucose in distilled water.

Torsion of the fallopian tube.—(*Post-grad. Med. Jour.*, Sept. 1952).

Hershman reports two interesting cases of torsion of the Fallopian tube.

The first patient, a girl aged 17, was admitted to Wordsley Hospital on December 26, 1951, complaining of pain of four days' duration localized to the right iliac fossa. It was continuous and of a nagging type and had gradually got worse. She had been carrying out her normal occupation as a machinist but had felt unable to do so on the day of admission and had vomited for the first

time the previous day. Close questioning did not reveal any other symptoms. The bowels had been open normally, micturition was normal and the periods were regular. Her last period ended eight days before admission.

On examination, she was not obviously in pain, her temperature was 100·4° and pulse 100. There were no physical signs other than those of the abdomen, where there was tenderness and guarding in the right iliac fossa. Rectal examination showed tenderness on the right side. With a diagnosis therefore of appendicitis laparotomy was carried out. On opening the peritoneum there was found to be considerable quantity of serous fluid. The appendix looked normal. Further search showed the right Fallopian tube to be twisted many times at the fundal end. The distal three-quarters of the tube was enlarged and hæmorrhagic and the fimbrial end was completely closed off. The ovary was larger than normal. It was quite easy to remove the tube and leave the ovary. Appendicectomy was also performed. Convalescence was uneventful.

The second patient, a housewife aged 21 with one child, was admitted on March 24, 1952, having developed pain in the right iliac fossa 36 hours before admission. She had vomited several times since the pain commenced and the latter had now become persistent. There had been an increased frequency of micturition since the onset. The periods were quite normal and the last one had commenced three days prior to the onset of pain. On examination she was tender in the right iliac fossa and tender in the pouch of Douglas. She was extremely obese and it was impossible to feel any mass. At laparotomy the right Fallopian tube was twisted approximately twice and was swollen, blue and tense. The fimbrial end was closed off. In the right ovary there was a small follicular cyst present. The left tube and ovary showed many adhesions between the ovary and the tube. The ovary was a little enlarged but otherwise normal. Right salpingectomy was carried out and the right ovary left intact. The cæcum and appendix were examined and a very small appendix remnant was not disturbed. Many adhesions were found running from the right iliac fossa into the pelvis. The abdomen was closed in the usual way.

Incidence:—Torsion of the Fallopian tube may occur either with a normal tube or with a diseased tube. With a normal tube torsion occurs most commonly in patients who have borne children. The conditions of rotation itself sometimes goes on to a spontaneous amputation Anderson (1945) reported a case of torsion of a normal ovary and spontaneous amputation of the tube in a 12 year-old girl.

Torsion of the diseased tube is the commonest variety of torsion and has long been recorded in the literature. Bland Sutton (1890) recorded a case of torsion associated with salpingitis and from this time on there have been many reviews, including those by Anspack (1912) who recorded 95 cases, 62 of which were associated with hydrosalpinx, and Regad (1933) who recorded 201 cases from the literature, and of these 18% were associated with hydrosalpinx and approximately 13% were associated either with salpingitis or ectopic gestation.

Clinically:—Nixon (1948) states that the fundamental features are the occurrence simultaneously of pain and vomiting associated with a palpable mass. However, this was not so in the first case, the vomiting occurring three days after the pain commenced. The patient being a virgin, a vaginal examination was not carried out. The condition is said to be more common on the right than on the left. The explanation given is that the sigmoid colon on the left interferes with torsion.

Treatment of genital hypoplasia.—(Geber and Fraunheil, 11: Oct. 1951, *Eng. Abst. J.A.M.A.*, 148 : 4, 1952).

Friedberg differentiates two types of hypoplasia of the uterus:—the infantile uterus and the hypoplastic uterus but admits there are transitional forms between the two. The most characteristic feature of the infantile uterus is the comparatively large size of the cervix in relation to the corpus, the normal

3:4 ratio being reversed to a 4:3 ratio. The uterus may be of almost normal length but is very slender. The growth of the uterus has been arrested at an infantile stage and usually there are other signs of infantilism such as a trough-shaped perineum and absence of the posterior vaginal vault. The growth of the ovaries may be inhibited. Hypoplasia of the uterus in contradistinction to infantilism involves only the uterus, the total length being reduced, but the proportion between the cervix and corpus is normal. Furthermore, the growth disturbance is limited to the uterus and is probably due to hormonal factors. The uterus is more like the post-climacteric uterus and is found in cases of secondary hypoplasia. Of 81 cases of secondary hypoplasia studied by the author over a period of 5 years, 62 had the infantile form and 19 had the hypoplastic form. All the patients were over 20 years of age and complained of menstrual disturbances or sterility. In some of these cases local hormone therapy was tried, using crystalline diethylstilboestrol dipropionate. Friedberg injected 1 c.c. of a suspension containing 2·5 mg. per c.c. into each side of the cervix to a depth of 1 cm. These hormone deposits were active for 3 to 4 weeks and produced a much greater growth-stimulus on the uterus than the customary form of hormone therapy. In 12 cases the author corroborated this by probe measurements.

MEDICINE AND THERAPEUTICS

Megaloblastic anæmia treated with vitamin B_{12} and folic acid.—(*Act. Med. Scand.*, 142, Feb. 1952 : *Eng. Abst. What's New*, Sept. 1952).

Nieweg *et al* treated a series of cases of megaloblastic anæmia, first with vitamin B_{12} and if not effective, then with pteroylglutamic acid : some responded to vitamin B_{12}, and some did not. In those which did respond, the neurological lesions were also favourably affected by B_{12}. In these patients folic acid may cause hæmatological remission. In the second group which did not respond, there was a dramatic clinical and hæmatological response to folic acid after failure of B_{12} therapy ; these patients appeared to have no neurological lesions. In the authors' opinion, two different deficiencies appear to be involved. In the vitamin B_{12} deficiency group, belong Addisonian pernicious anæmia, non-tropical and tropical sprue, post-gastrectomy, megaloblastic anæmia and some cases of nutritional macrocytic anæmia. To the second group belonged the socalled pernicious anæmia of pregnancy, some cases of non-tropical sprue and of nutritional macrocytic anæmia. It is believed likely that B_{12} and folic acid are involved at different points of desoxyribose nucleic acid metabolism, but that folic acid is not concerned with ribose nucleic acid synthesis disturbance of which may produce neurological disorders.

Survival of staphylococci within leucocytes.—(*J. Exp. Med.*, 95:2, 1-2-1952).

Rogers and Tompsett of the New York Hospital—Cornell Medical Centre, made a special study of the phagocytosis of staphylococci by human leucocytes and observed that strains of staphylococci producing human infection were phagocytized by human polymorpho-nuclear leucocytes *in vitro* under conditions in which virulent pneumococci, streptococci or *klebsiella* were rarely engulfed.

In the presence of human leucocytes in plasma there was a rapid fall in the numbers of viable staphylococci of both pathogenic and non-pathogenic strains, the beginning of which was detectable in 10 to 15 minutes. The fall in culturable pathogenic micro-organisms was considerably less marked, however, and a rapid resurgence of growth occurred in 4 to 8 hours, whereas the number of culturable non-pathogenic micro-organisms remained low for 18 to 24 hours.

These differences appear to be explained by the observation that a significant number of micro-organisms

of pathogenic strains were able to survive within human leucocytes. Such intracellular survival was found to be associated with evidence of destruction of the leucocytes. In contrast, non-pathogenic strains of staphylococci failed to survive within human polymorphonuclear leucocytes following ingestion.

REVIEWS OF BOOKS, PERIODICALS AND REPORTS

The Human Pelvis—[By CARL C. FRANCIS A. B., M.D., Assistant Professor of Anatomy, Department of Anatomy, Western Reserve University, Cleveland, Ohio. With 61 illustrations including three in colour. 1952, pp. 210. Published by the C.V. Mosby & Company, St. Louis].

An instructive well-got-up book on the human pelvis with over sixty illustrations containing about 200 pages printed on thick glazed paper. The author deals in the first few chapters with the osteology of the human pelvis and in the subsequent few, with the soft structures in the human pelvis, the pelvic viscera and their development in both sexes. The chapter on the time and mode of ossification of the individual bones of the pelvis is based on adequate statistical data obtained from radiographic findings and makes interesting reading. So also is the chapter on pelvimetry where the average diameters in the two sexes of both white and negro races are given in tabular form; and are based on statistical data relating to the differences and the factors influencing them in the adult pelvis, the various forms and clinical types and the differential characteristics of the male and female pelvis. These are a few of the topics that would greatly interest not only the practising surgeon but also the obstetrician and the anthropologist. U.C.R.B.

Logan Turner's Diseases of the Nose, Throat, and Ear—[Edited by DOUGLAS GUTHRIE, Assisted by JOHN P. STEWART with the collaboration of CHARLES E SCOTT, A. BROWNLIE SMITH, I. MALCOLM FARQUHARSON, I. SIMSON HALL, R. B. LUMSDEN, and J. F. BUREL. Fifth edition completely revised. 246 illustrations and 9 coloured plates. 1952, 478 pages Published by John Wright & Sons Ltd., Bristol].

This book is a great improvement on the original, with several additions based on the latest researches on the methods of diagnosis and lines of treatment. There are also additional illustrations radiographs, and colour plates nicely got up on excellent paper, with elegant printing.

The subject matter has been thoroughly re-arranged and completely rewritten by specialists of outstanding ability and international repute. The book is an excellent introduction for post-graduate specialisation, as it contains detailed anatomy and physiology as well.

The first section on diseases of nose, contains separate chapters on polypi and allergy, along with extra diagrams on frontal sinus operation, step by step.

In the III, IV and Vth sections on diseases of the throat, indications for bronchoscopy and trachioscopy are dealt with in greater detail, together with diagrams of direct laryngoscope and bronchoscope. Plates and skiagrams of œsophagial tumours and lipoidal injection, have been added. Diagrams of the Boyle Davis gag and the guillotine method of tonsillectomy, have also been incorporated.

The VIth section on Diseases of Ear, contains the latest inventions by Audiometer tests and the Fenestration operation. Vestibular physiology is treated in greater detail.

Finally a separate chapter in section VII deals with the place of sulphanilamides, penicillin and streptomycin, especially in certain acute conditions of ear, nose and throat. M.R.B.

Synopsis of Genito-urinary Diseases—[By AUSTIN I. DODSON, M.D F.A.C.S., Professor of Genito-urinary Surgery, Medical College of Virginia: Genito-urinary Surgeon to Crippled

Children's Hospital; Urologist to St. Elizabeth's Hospital; Urologist to St. Luke's Hospital and McGuire Clinic with DONALD L. GILBERT, M.D., Instructor in Urology, Medical College of Virginia. Fifth edition with 122 illustrations, pp. 313. Published by the C. V. Mosby Company, St Louis].

This synopsis has been compiled with a view to setting out clearly the conditions affecting the genito-urinary system and contains 14 chapters. The first deals with urologic diagnosis. In this chapter are described the signs and symptoms of diseases pertaining to the genito-urinary system and the method of examination for abnormalities. The 2nd chapter deals with instruments used on the urinary passages, the minor diagnostic investigations that are performed and the use of the latest antibiotics in diseases of the system. The third and the fourth chapters deal with the anatomy of the urogenital tract and congenital anomalies met with in the kidneys, ureter and the bladder. Infections of the urinary tract are treated in four chapters, three of which deal with non-tuberculous infections. In this group are described urethral infections due to both gonorrheal and non-gonorrheal causes with appropriate treatment; venereal infections ranging from mild balanitis to the rarer conditions like gumma of the penis are well described. A small section has been devoted to disturbances of the male genital functions like impotence and male sterility. The chapters on tuberculosis of the urogenital tract and renal calculi are of outstanding merit, as they are very elaborate with suitable X-ray photographs. Injuries to the kidneys, neurogenic dysfunction of the bladder and tumours of the urogenital tract are also dealt with in separate chapters.

The book is printed in bold clear type and contains 122 illustrations which are themselves highly educative.

We recommend this book to all students of medicine. U. V. B.

Elements of Light Therapy–[By Dr. JEAN SAIDMAN, M.D., and Dr. PRANJIVAN M. MEHTA, M.D., M.S., F.R.P.S., Director, Solarium—Jamnagar, pp. 153. Published by the Popular Book Depot, Lamington Road, Bombay-7. Price Rs. 7/8/].

This book which is a revision by Dr. Mehta of an original work by the late Dr. Saidman of Paris, in which the author deals with the varieties and uses of light therapy in various disorders of the human system. Though small in size, the book has touched every aspect of light therapy. The general properties of light and the individual components of light and their therapeutic uses such as, ultra-violet radiation, infra-red radiation, mercury vapour radiation are all dealt with in detail. The technique of irradiation and dosimetry are also explained at length.

The book is well got up and should be very useful to those who deal with electro-therapy. U.V.B.

We have received from Messrs British Drug Houses (India Ltd.) a report on the supply of Insulin by the British Monopolies and Restrictive Practices Commission, presented to Parliament on 14th October 1952 and ordered to be published by the House of Commons. The report is based on the results of their investigation into the manufacture and supply of Insulin by the British Insulin Manufacturers' Association. This report was editorially reviewed by the *British Medical Journal and Lancet* in their issues of the 8th November 1952.

The British Insulin Manufacturers (BIM) is not a trade association and has no salaried staff. The offices of chairman and secretary are held in rotation by members of the staffs of the participating companies for 1 or 2 years at a time. The firms participating are Burroughs Wellcome, Boots, Allen and Hanburys, and BDH. They have combined together on a co-operative basis and we are impressed by the thoroughness and extent of the scientific and technical collaboration amongst the members of the B.I.M., which has resulted not only in increased yields of insulin but also in a standardized product being made available to the public at relatively cheap prices. The chairman of the commission consisting of ten members, was Sir Archibald Carter and the secretary was

Mr. W. Hughes. The Board of Trade requested this commission to investigate and report on whether the conditions to which the Monopolies and Restrictive Practices (Inquiry and Control) Act of 1948, applies, prevail in regard to the supply of all forms and preparations of Insulin. The Commission, after due investigation came to the conclusion that the arrangements now made by the B.I.M , individually and collectively for the supply of insulin operate in the public interest and that no change was needed. They reported accordingly to the Parliament. T.N.S.R.

We have received a copy of the Annual Report of the Society of Industrial Medicine—India, for the year 1951-'52. It is a record of good progress in this specialised field of medicine, and we note with pleasure that the third Conference held in Bombay in Dec. 1951 was a very great success. Our readers will be aware of the fact that during the year 1952, two new branches were formed at Bombay and Madras and that the State Minister for Industries in Madras Shri Dr. U. Krishna Rau inaugurated the Madras Branch.

The fourth All-India Conference was recently held at Bangalore on the 10th, 11th and 12th December 1952 with the Chief Minister, Mysore State, Sri K. Hanumanthayya inaugurated the Conference. A large number of interesting papers on a variety of useful subjects relating to Industrial medicine and welfare were read by specialists in the subject. The Mysore Minister for Health opened an instructive exhibition on "Safety in Industry" Dr. J. C. Patel, President of the Society delivered the Presidential address.

We have editorially noticed the progress of Industrial medicine in the current issue of the ANTISEPTIC and had occasion therein to refer to the speeches made at this Conference.

BOOKS RECEIVED

The following books have been received since 15-12-'52 and the courtesy of the publishers in sending them is acknowledged. Reviews will be published in due course.—ED.

1. **"Side Effects of Drugs"**—[By L. MEYLER, Consulting Physician at Groningen (Netherlands) Translated by PH. Vuijsje and W. Mulhall Corbet, Amsterdam. Elsevier Publishing Company Inc. Amsterdam, 1952.

2. **"Sushruta Samhita"** (Hindi)—[By Dr. BHASKAR GOVINDA GANEKAR, B.Sc., M.B., B.S., Hindu University, Banaras, 5]. [Price Rs. 9

NEWS AND NOTES

Controlled Respiration for Brain Surgery

Successful use in Australia

Anæsthetists of the Royal Melbourne Hospital, Australia, have successfully used automatically, controlled respiration for brain surgery.

The equipment, which was made in Australia, was designed to offset the disadvantages of the manual respiratory control hitherto required in conjunction with the increasing use in anæsthesia of such relaxing agents as "tubarine" and "Flaxedil".

In 1950 the new machine was produced, under the prompting of Dr. Norman R. James, Royal Melbourne's Director of Anæsthesia, and was used for several intra-abdominal and chest operations, and frequently for such emergencies as cases of asphyxia due to barbiturate poisoning. Its success earned it a trial for other types of operations and in October, 1952, it was used for the first time in neuro-surgery, for an operation that lasted six hours. It quickly proved successful, especially in operations requiring surgical attention to those areas of the brain impinging on the vital respiratory centre.

Australian physiologists have for many years used reliable automatic machines for the breathing of curarised animals, but little response followed their repeated advice to anæsthetists to adopt similar methods when using relaxing agents.

Anæsthetists in other countries have shown similar reluctance to use automatic equipment for such work, in spite of effective machines made in Sweden and Denmark in 1939 and 1948, respectively. Many complained that the Scandinavian equipment was too bulky and complicated.

Australian designers, however, have followed the simple principles practised in manually operated to-and-fro controlled breathing through a Water's canister, and have evolved a relatively simple and safe electro-mechanical system which can be used as a sound basis for further practical design and clinical investigation.

A rubber bellows, similar to the one used on the well-known Coxeter-Mushin circle absorber, is driven through suitable gearing by a sparkless induction motor. By means of a link motion, controlled by a small hand-wheel, the tidal volume can be altered to suit the patient's needs. The rate of breathing is kept constant at 20 a minute, and it has not so far been found necessary to change this rate. Pressure within the circuit is controlled by a water manometer, adjusted by a displacing plunger. This manometer also acts as a sensitive safety valve, and will quickly detect such indiscretions as the surgeon's assistant leaning too heavily on the patient's chest.

The Australian machine is much more simple to use than those designed in Scandinavia. Intubation is effected with a cuffed tube, the patient being first anæsthetised by Pentothal with a relaxing agent such as Tubarine.

With the patient's breathing being maintained by means of the usual rubber reservoir bag, and anæsthesia usually by nitrous oxide and oxygen, the Water's canister is connected to the endotracheal tube. There is a spill-over valve for the excess nitrous oxide oxygen mixture. The moment all connections are properly secured and gas-tight, the reservoir bag is removed and the breathing machine connected in its place. By means of the hand-wheel, tidal volume is adjusted to the patient's instant requirements, or to any that may arise during the course of the operation.

Pressure in the circuit is adjusted by movement of the displacing plunger connected to the water manometer, the usual reading being between 100 and 130 millimeters of water. Should the anæsthetist wish for any reason to change back to manual control, he simply disconnects the b r e a t h i n g machine, and reconnects the manually operated rubber reservoir bag.

Extensive clinical experience with this automatic breathing machine has justified the claims made by Australian physiologists and Scandinavian anæsthetists that automatic control is superior to manual. Dr. James says that only one exception has been found—where a lung is being manoeuvred during certain stages of an intrathoracic operation.

Prompted by Dr. James, designing and building of the machine were carried out by Mr. R. H. M. Harrington, of the Pacific Electric Co. Pty. Ltd., under the supervision of Melbourne University's Dean of the Faculty of Medicine, Professor R. D. Wright. The work was done with the aid of a grant from the Australian National Health and Medical Research Council.—(*Release P. 1857, Australian High Commissioner's Office*, New Delhi).

The 14th All India Ophthalmological Conference, Poona 1953.

The 14th All India Ophthalmological Conference will be held on the 3rd, 4th and 5th March 1953 under the auspices of the Poona Cphthalmological Society. The subject for the Symposium is ' Ocular Manifestations of Diabetes ". All papers to be read before the Conference should be sent before the 15th January, 1953 to Dr. S. N. Cooper, Laud Mansion, 21, Queen's Road, Bombay No 4.

All specialists and other practitioners interested in Ophthalmology are cordially invited to attend the Conference in large numbers and make it

a success. Regarding details of accommodation, etc., intending delegates are requested to write to Dr. D. G. Patwardhan, Jt. Hon. Secretary, Reception Committee, Saraswati Vilas, Laxmi Road, Poona, 2.

Polymyxin B found Effective Against Long-term, Stubborn Infections

A variety of stubborn infections which have long defied medical science are being conquered by polymyxin B, one of the newer antibiotics, according to recent reports from American physicians.

Unlike broad-range antibiotics, such as terramycin, which are effective against a wide spectrum of disease-causing organisms, polymyxin B has a germ-killing "appetite" for a small but highly troublesome group of microbes, *e.g., Bacillus pyocyaneus or Pseudomonas aeruginosa*. This germ is an inhabitant of the human intestine, and under normal circumstances causes little trouble. However, when the body defences are weakened or underdeveloped, it sets up an infection which is difficult to deal with. "The antimicrobial agent most effective against this organism is polymyxin," says Dr. Jawetz.- (*Arch. Int. Med*).

Polymyxin B is also reported to be effective in eradicating chronic dysentery infections caused by *Shigella* organisms. Terramycin and other antibiotics have been found to suppress the acute infections, but chronic latent infections are common sequelæ to an acute attack of the disease.—*Pediatrics*, 1952).

The control of chronic dysentery infections in institutions or where large groups must be housed without adequate facilities depends largely on stopping spreaders of these organisms. Lieberman and Jawetz say, "In such persons, however, conventional chemotherapy often fails to eradicate the infecting organisms. Polymyxin was much more efficacious than other antimicrobial agents in the eradication of chronic dysentery infections".—(*M.P.I. Bureau Bulletin*, Dec. 1952).

An Appeal for a Noble Cause: Kasturba Hospital, Sevagram

Dear Sir,

You probably know that Kasturba Hospital at Sevagram, started as a small dispensary in Gandhiji's Ashram towards the end of 1937. Since then it has developed into a rural hospital, serving a ten-mile radius which includes about 75 villages. The Hospital has a maternity Section which trains midwives for Kasturba Gandhi National Memorial Trust. The daily average in the out-patients department is from 100 to 150. Curative work is not the most important. Preventive outlook is emphasised and the Hospital has rendered preventive services in the form of Malaria Control Programme and preventive measures against Cholera and Small-pox. Preventive work of maternity Section consists of Maternal and Child Health Services which include ante-natal clinics for mothers and special clinics for children. The Hospital has no regular source of income. It was financed by MAHATMA GANDHI through donations from friends during his lifetime and we hope that the Gandhi Memorial Trust will continue to support it. The population served by this Hospital is so poor that their meagre contributions can hardly count so far as the expenditure is concerned.

While thanking you for your help and co-operation in the past, may I request you to please continue to help this humanitarian project in any shape or form that you can?

Yours sincerely,
SUSHILA NAYAR,
Chairman, Kasturba Hospital Managing Body.

20th Dec. 1952.

ACKNOWLEDGEMENT

We have received with thanks a copy of their diary for 1953, from Messrs. W. T. Suren & Co. Ltd., P.O. Box 229, Bombay, sole distributors for the Teddington Chemical Factory. The diary is as usual very well got up and provides a great deal of information not only about their own specialities but also on matters of general interest useful to the medical profession for ready reference.

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